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Issue 379
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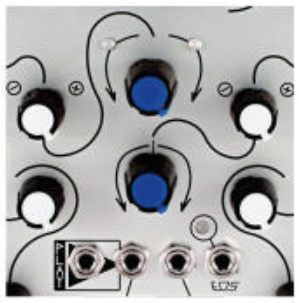
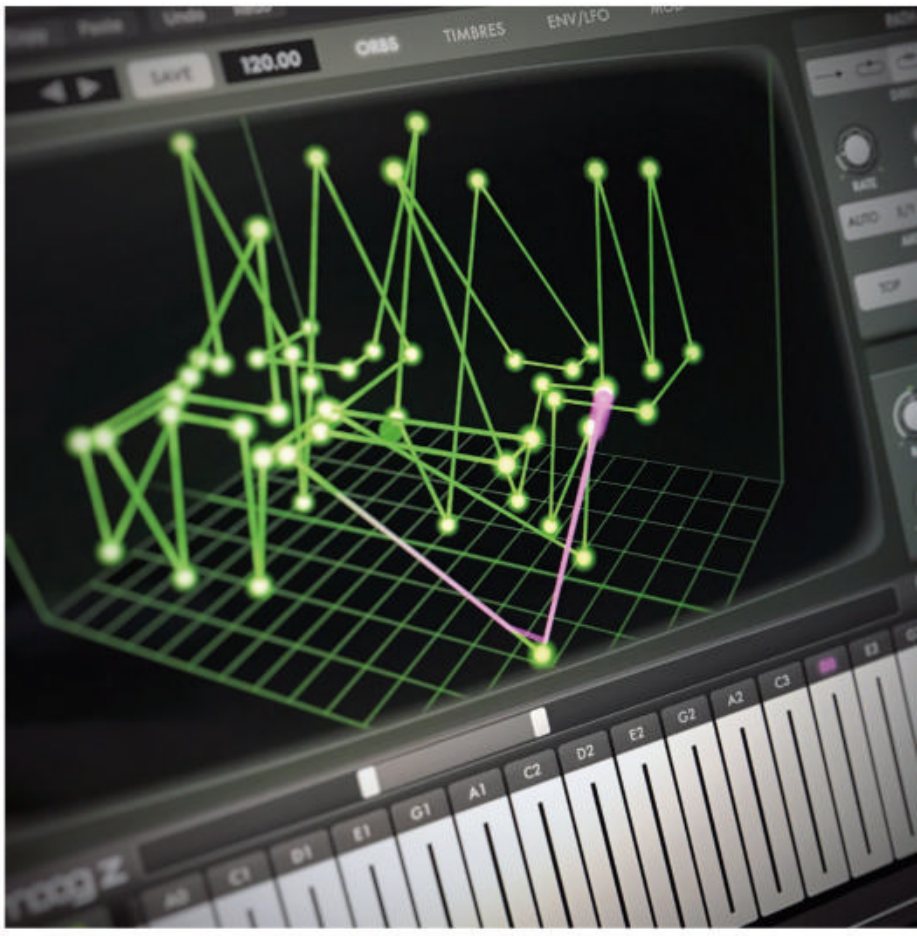
Refresh your production toolkit with 2022's **need-to-know** trends





REVIEWED

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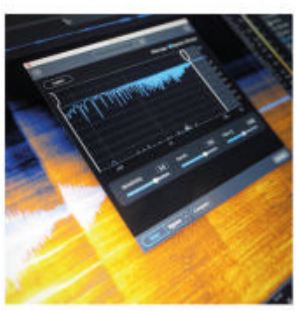
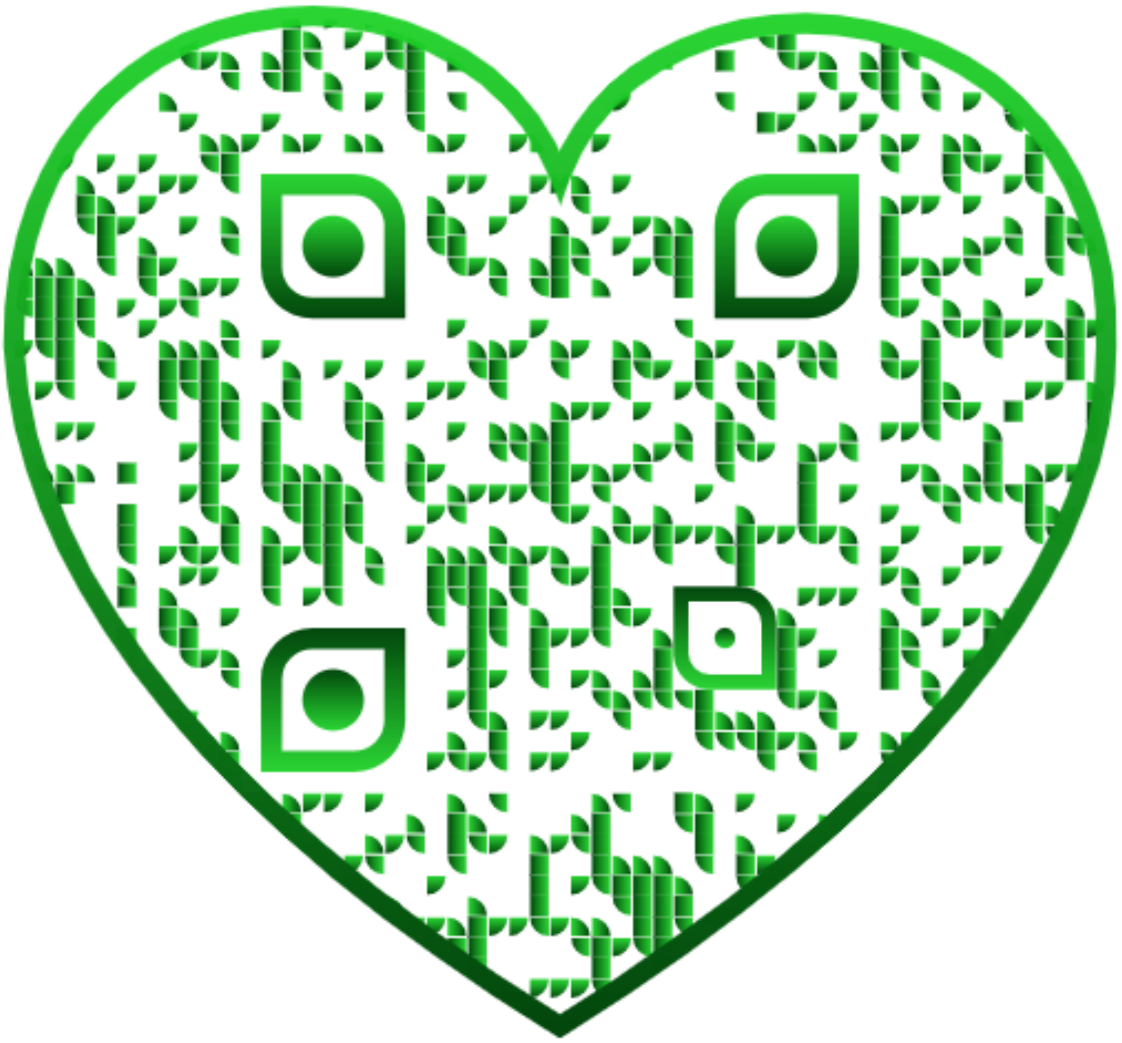
UA Volt 76
Animoog Z, Alesis V49, iZotope RX 9, **Amplitube X-Gear pedals** & more...



PLUS: INTERVIEWED

NATHAN FAKE
BONOBO
SYLVAN ESSO
MMM

FUTURE



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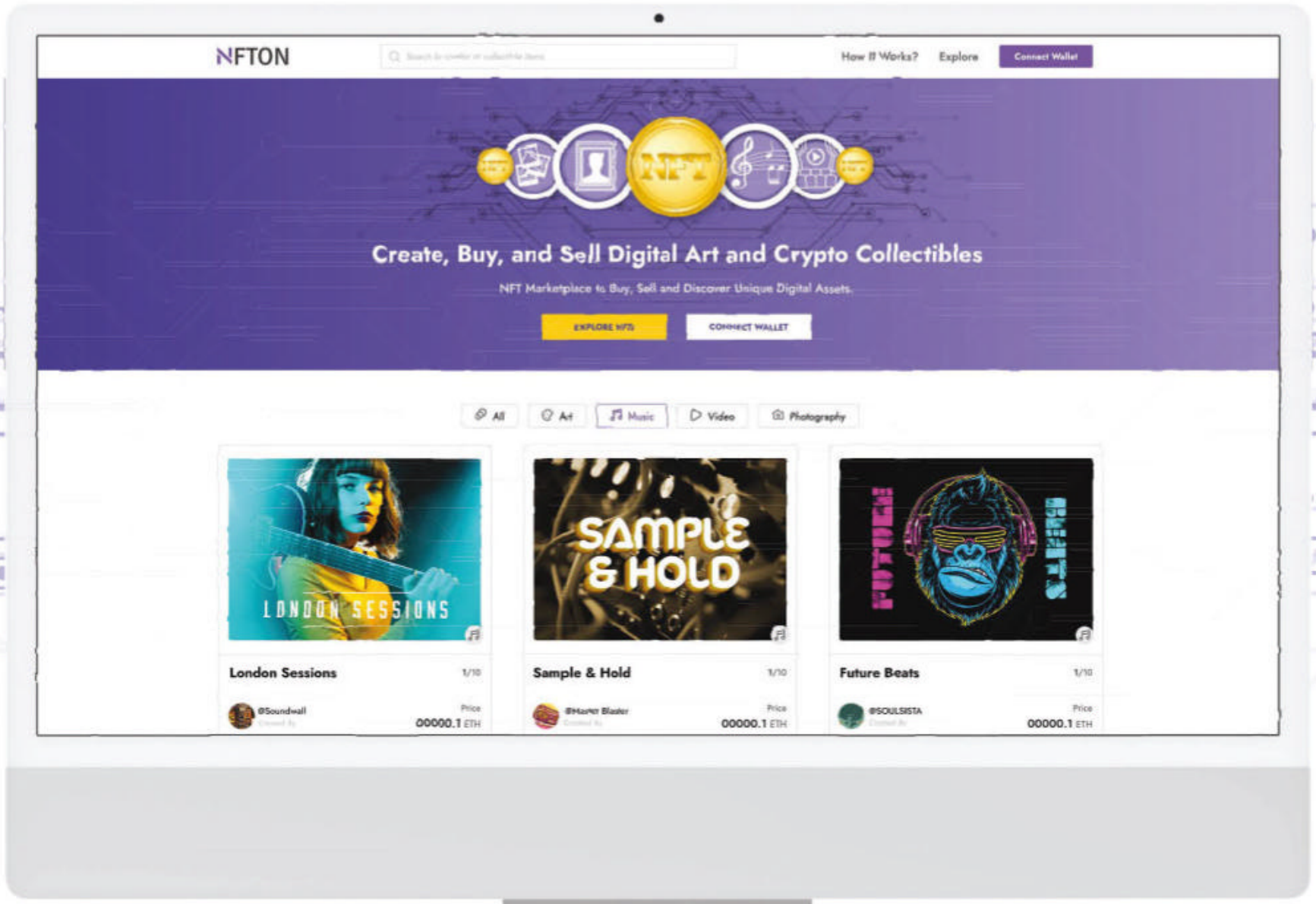

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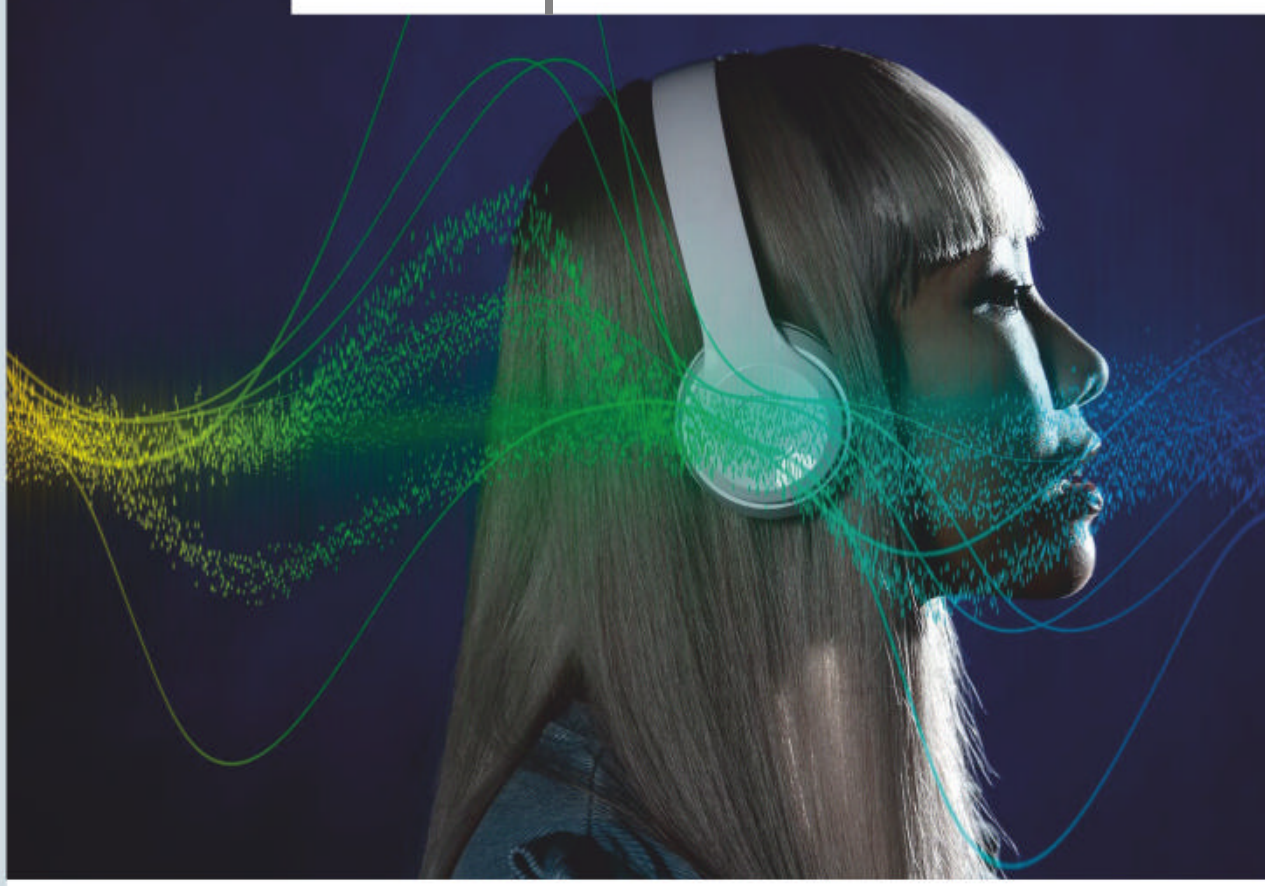

Get with the times

There's an interesting debate to be had about how important it is, as an electronic musician, to keep up with the latest developments in technology.

On the one hand, it's obviously not true that owning all the latest plugins and being au fait with the hottest trends is a prerequisite for making good music. Numerous artists are out there making genre-bending music with vintage synths and lo-fi gear, after all. But at the same time, some of the most interesting producers around are those exploring the fresh possibilities opened up by new technologies and ever-more powerful home computers.

Maybe you won't be hindered by not being up to speed with things like machine learning plugins or spatial audio, but a broad understanding certainly can't hurt. And that's what we're here to help with in this issue's cover feature. Head for **page 26** to get started.

We hope you enjoy the mag.

Si Truss, Editor-In-Chief
simon.truss@futurenet.com

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Bonobo

More than two decades after his laid back debut, Simon Green takes the plunge into modular for *Fragments*

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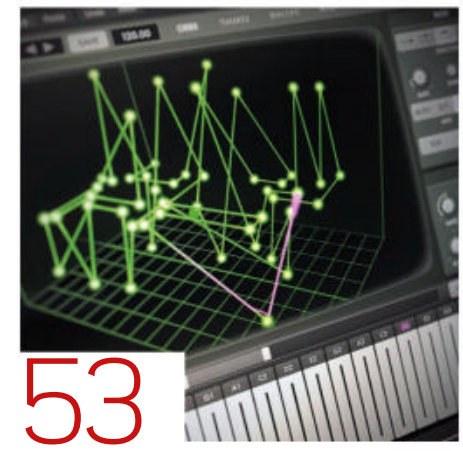
Korg ARP 2600 M

Is smaller better for this 2020s take on the ARP 2600?



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David Castellani

INCLUDES VIDEO

The LA producer introduces his first module, the Anti-Kulture Precision Disruptor, and breaks down his craft

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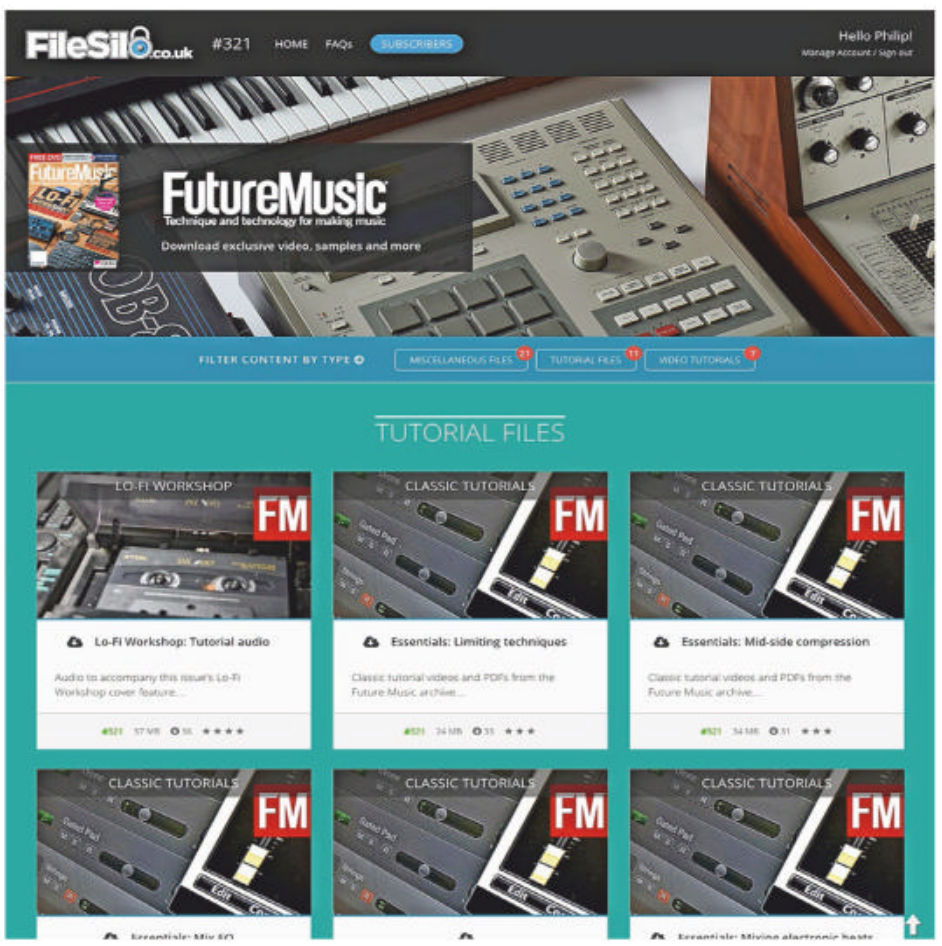

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AMBIENT SOUNDS PT.1

- '90s Ambient (562 samples)
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AMBIENT SOUNDS PT.2

- Majestic Bells & Mallets (444 samples)
- Spring Reverb & Tape Delay (533 samples)

ATMOSPHERES & BACKGROUNDS

- Atmospheric Beds (369 samples)
- Noise, Crackle & Hiss (512 samples)
- Sounds of the City (371 samples)

CLASSIC SYNTHS PT.1

- Analogue Polys (625 samples)
- SH Collection (500 samples)

CLASSIC SYNTHS PT.2

- Analogue Poly Chord Hits (342 samples)
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- Ultimate Snares & Claps (676 samples)
- Vintage Drum Machine Hits (548 samples)

FX & TRANSITIONS PT.1

- Filter Fun (496 samples)
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- Total Transitions (260 samples)

FX & TRANSITIONS PT.2

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HIP-HOP, FUNK & SOUL

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- Minimal Hip-Hop (540 samples)

HOUSE & TECHNO

- Chicago House (537 samples)
- House & Techno Stabs (213 samples)
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PERCUSSION

- Modular Percussion (510 samples)
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- Sticks, Knocks & Rims (502 samples)

TRANCE & RAVE

- Classic Breakbeats (371 samples)
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AND THERE'S EVEN MORE!

AMBIENCE EXTRAS

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BASS BUNDLE

- Amped-Up Bass (234 samples)
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FOUND FAVOURITES

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- Out There FX (500 samples)
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- Electro FX (321 samples)
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Refresh your music making toolkit as we run down the tech know-how you need to get to grips with

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Arturia update Pigments and PolyBrute

The French brand add major new features to their flagship hardware and software synths

Arturia have rounded out 2021 with a pair of significant updates which bring some eye-catching new features to two of the company's flagship synths.

First up, Pigments – Arturia's multi-faceted software 'power synth'. Having already gained an additive engine and utility oscillator earlier in 2021, the plugin now grows further still with the release of version 3.5. The headline feature here is a new CrossMod tool. This builds on the existing audio-rate modulation capabilities within Pigments' two Engines (aka its fancy oscillator sections) with the ability to use each Engine as a modulation source for the other.

There are additions elsewhere too, including an expanded comb filter and revamped assortment of distortion types. There are new wavetables added to the stock library too, as well as 150 new presets. Arturia describe these new tools as

introducing a harder edge to Pigments' sound, specifically tailored to genres like grime, drill and trap. To capitalise on that, the company are also releasing a trio of paid expansion packs offering sounds specifically aimed at trap, bass and EDM respectively. Pigments 3.5 is a free update for all users.

Soundshaper Update

PolyBrute owners, meanwhile, can download the new v2.0 firmware, which Arturia are calling the Soundshaper Update. The big news here is a pair of new effects, adding a multi-shape EQ stage and vintage-style ensemble effect to PolyBrute's range of DSP processors. The update lets users adjust the accuracy of controls for numerous elements of the analogue sound engine, such as pulse width, LFO rate and filter settings.

Version 2.0 also adds a new chord mode, which lets users set chord shapes of up to six notes and trigger them with a single keyboard press. There are other adjustments too, such as a new duophonic aftertouch mode, extra curve types for LFO 3 and more presets. All PolyBrute owners can download the firmware update for free now. **FM**

Slate Digital promise to go beyond Ableton Live's OTT preset with the MO-TT dynamics plugin

The OTT preset found in Ableton Live's Multiband Dynamics plugin has become a modern music production staple, offering you a surefire way to make your tracks explode from your speakers and sound larger than life.

Now Slate Digital are promising to go beyond OTT with MO-TT, a new dynamics processor that's designed to give you everything that Ableton's preset does and more. This isn't the first time the OTT preset has inspired a plugin, of course – Xfer Records' free OTT has been around for a while now – but Slate believe that their effort is the first to capture the "lightning in a bottle" that's made the original preset so popular.

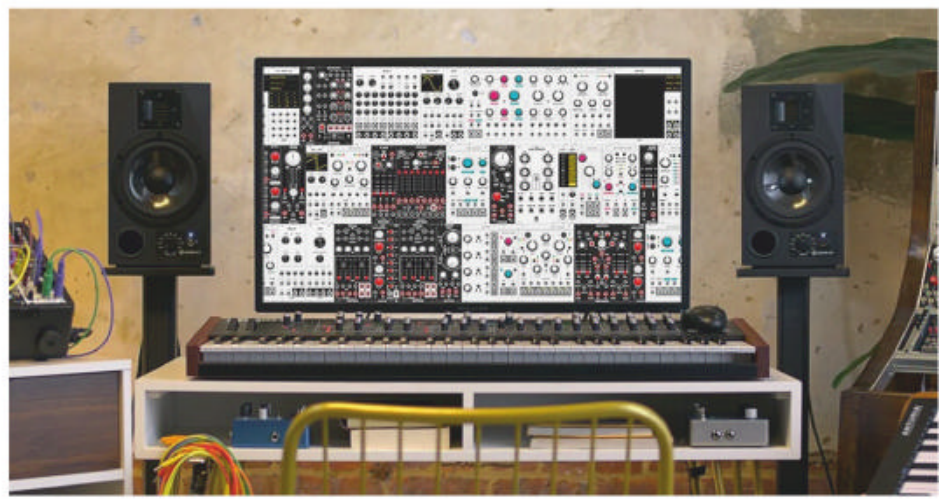
MO-TT offers three Quick Set Modes (OTT, Hip Hop and Vox) and then enables you to control the speed of your transients with the Classic, Smooth and Smack Timing styles. Global Macros mean that you can tweak the preset to taste without 'breaking' it. Slate Digital are also keen to talk up MO-TT's flexibility – you can dial in the amount of processing required for each frequency band, and define these bands with high-pass and low-pass filters. If you want the quickest possible results when using MO-TT, you can use its Easy view. Those who want more control so they can finesse their sound can use the Advanced view.

MO-TT runs on PC and Mac in VST/AU/AAX formats. It can be purchased as a perpetual licence for $149, or you can use it free for a month, along with all of Slate's other plugins, by signing up to a trial. FM

VCV Rack 2.0 launches with VST support and more

VCV Rack is a wonderful thing – an open-source Eurorack-style modular soft synth with a great community behind it. Version 2 offers a new UI, a dark mode for those light-night patching sessions, an improved browser, and import/export, duplicate and randomise module selection options.

Most notable, though, is the addition of VST plugin support, though this is only offered in the new paid-for Pro edition of VCV Rack 2.0. This costs $149, although it's currently available for the introductory price of $99. Support for other plugin formats is set to follow. The good news is that a free community edition of VCV Rack 2.0 can also be downloaded, though this is restricted to standalone operation. Both versions of VCV Rack 2.0 are available now for Windows, Mac and Linux. FM



Reason's new MIDI Player Effect can generate basslines in seconds

Reason Studios have launched a new MIDI Player Effect for the company's DAW – the Bassline Generator. Focused on helping you to create low-end parts as quickly as possible, this enables you to generate a bassline just by setting a few simple parameters. However, you remain in control, and you can tweak the pattern until it works for you via the simple GUI. There's also a randomise function, and eight pattern memories for storing variations. You can trigger and transpose basslines from your MIDI keyboard, and control external instruments via MIDI. CV inputs and outputs enable connectivity to other devices in the Reason rack.

Bassline Generator comes with more than 100 patches, plus Combinators and patches for other devices that will give you ready-made bass sounds. Reason+ members can start using Bassline Generator now as part of their subscription, while other Reason users can purchase it for $69 via the Reason Studios add-on shop. FM

SSL launch Big SiX SuperAnalogue mixer

SSL have introduced a beefier version of the SiX compact console called – appropriately enough – Big SiX. This ups the ante by offering a 16-channel mixer, and blends features from the classic large-scale SSL consoles with more contemporary niceties such as USB integration, additional processing and advanced routing options.

According to SSL, this makes Big SiX "the ultimate tool for artists and musicians working in a hybrid recording and mixing environment".

The story starts with four mono channels that feature SSL's SuperAnalogue mic preamps. These offer mic/line/Hi-Z inputs, a high-pass filter, SSL Channel Dynamics, an updated three-band EQ and a fully balanced insert point.

There are also four stereo inputs with dual mono switching, and the Big SiX can serve as a 16-channel USB 24-bit/96kHz audio interface.

You can choose from three compressor flavours, one of which is an 'Essential' version of the classic SSL G-Comp Bus Compressor, which now features the well-known auto release option.

The SSL Big SiX is available now priced at £1,999. FM

TALKING SHOP

Nathan Fake

Built from keening detuned pads, soaring synth lines and crunchy, lo-fi percussion, Nathan Fake's tunes convey a psychedelic melancholia that's become something of a signature sound in the near-two decades since his Border Community debut.

The 2020 LP *Blizzards* melded the hyper-melodicism of Fake's early work with a renewed percussive vigour that prompted numerous publications to declare it as his finest work to date. This year, Fake released a companion EP to *Blizzards* that lines up two remixes – *Cry Me A Blizzard* from Afrodeutsche and *Vectra* from Irène Drésel – alongside a live version of *Torchsong,* and *Sandstone*, an Orbital-inspired anthem. We caught up with Fake to find out more.

When did you start making music?
"I first started 'making' music when I was around 15. I had a Boss DR-550 drum machine and a Casio keyboard, and I used to record beats I'd made onto tape. Then I got a SP-202 and started making 'tracks', ie, just little jams made of loops I'd sampled off my drum machine, and also random samples and sampling myself playing the keyboard etc. By the time I was 18 I had a PC and started using Cubase and making actual real tracks that people wanted to release."

Tell us about your latest release – what were the influences behind *Sandstone*?
"*Sandstone* is an idea I had for a track when I was a teenager, but didn't have the equipment to make it, and so I decided to do it now. [*laughs*] I've got a photographic memory so I can genuinely remember this idea note for note from when I was 15. It's heavily inspired by Brown-era Orbital, but more raw and minimalist. It was finished after *Blizzards* was released."

What led you to record this alternate live version of *Torchsong* for the EP?
"It was recorded when I was putting together my live show which was meant to be toured in 2020, but the only airing it got that year was the couple of live streams I did from home. It isn't very exotic gear-wise – it's done mostly on Ableton Live, jamming/improvising with a loop of the track, also using the Waldorf A1 for the synth parts, whereas on the album version it's a Korg Minologue."

> "MOST OF MY GOOD IDEAS FOR TRACK ARRANGEMENT COME FROM JAMMING LIVE, THEN EDITING AFTER"

Why did you choose Irène Drésel and Afrodeutsche for these remixes?
"I'm a big fan of Henrietta's [Afrodeutsche's] music and I'd been wanting to get her to remix something off *Blizzards* for a while. The Irène Drésel came about actually as a remix swap, I'd remixed her in 2019 at her request. I love what she did to *Vectra*; the original is quite bouncy and fun and she made it into a dark trance kind of thing."

How do you approach the process of remixing the work of other artists?
"Usually I'll listen through the stems and find something in there that grabs my attention – often I'll take a single part of the track then I'll end up writing something totally new around it, but based on the original."

Tell us about your studio/setup.
"It's a home studio – I used to have a lot more hardware but I sold a bunch of it last year in lockdown. I still have my trusty Roland SH-09 and my Korg Prophecy, they're my absolute faves, also my MC-202. Also I could never sell my DR-550, not that it's worth anything more than about £20 now. Software is at the core, I use Ableton Live and Cubase VST5 and Adobe Audition and Cool Edit Pro."

What DAW (or DAWs) do you use?
"I started out using Cubase, as at the time (early 2000s) that was the only DAW I was aware of. Then once I started releasing records on Border Community I made friends with other musicians/producers and that opened my eyes a bit. I've been using Ableton Live for my live sets since 2004. I use it a bit for writing and recording too; it's very powerful."

What one piece of gear in your studio could you not do without, and why?
"My laptop! Very boring I know, but it's the most essential thing in there for making music at the moment."

What's your latest studio addition?
"A friend showed me the Gullfoss VST for mastering, which is amazing. I've no idea how it works but it's very impressive how it deals with sound."

What dream bit of gear would you love?
"I used to have a Roland Jupiter-6 and I'd love to have one again. Also I'd really love a Casio CZ-101. I'd love a decent reel-to-reel machine too."

When approaching a new track or project, where do you start?
"Mostly I either start with a melody inside my head and I'll work it out on the keyboard and then build something around it, or maybe add it to something I've made previously. Or often I'll start with a beat and add stuff to that, chords, melodies etc. Drums are usually my starting point."

What are you currently working on?
"I'm working on album number six at the moment. It started taking shape last year during lockdown and I'm super excited about how it's sounding. Also looking forward to touring the *Blizzards* live show some more in the coming months." FM

NATHAN'S TOP TIPS

Record live

1 **"Most of my good ideas for track arrangement come from jamming live, then editing the recording after."**

Don't clutter percussion

2 **"Instead of adding more shakers or something, try adding a subtle synth part, adding something tonal rather than more percussion. That can give you more options arrangement-wise too."**

Mono your reverb

3 **"I love the sound of mono-ed reverb, that's the reverb width set to zero. It makes drums sound less dry and harsh and also adds a lush vintage quality to the sound and overall mix."**

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Prince Fatty **Supersize**

Mr Bongo, 2010

Surrounded by his crack team, super reggae producer and veteran industry engineer, Mike Pelanconi, stepped into the studio once more under his Prince Fatty moniker to make one of the finest modern albums of the genre. Fresh from mixing Lily Allen's multi-million selling debut, he set about adding the same trademark dub science to his own group of top-flight musicians and singers.

Vocals came from legends like Little Roy, Winston Francis, Alcapone, and Horseman. Many he'd known for years, working reggae studios as a kid. And playing came courtesy of the slick fingers of Bubblers from the Ruff Cut Band, and Style Scott from the Roots Radics, glueing everything together.

The cherry on top was roots revivalist, Hollie Cook, daughter of Sex Pistol Paul Cook, and final front woman for post-punk outfit, The Slits.

Each musician fit Fatty's setup like a glove, as he worked the dials and expertly tempered the pressure levels.

Musically they recontextualised classics from Jamaican trio the Mighty Diamonds, flipped funk numbers by Curtis Mayfield, and added new life to golden era hip-hop bangers by Cypress Hill and the late Ol' Dirty Bastard.

The album was indeed supersized, and his collection of soundsystem troubling tracks beefed and bolstered by a master of his craft.

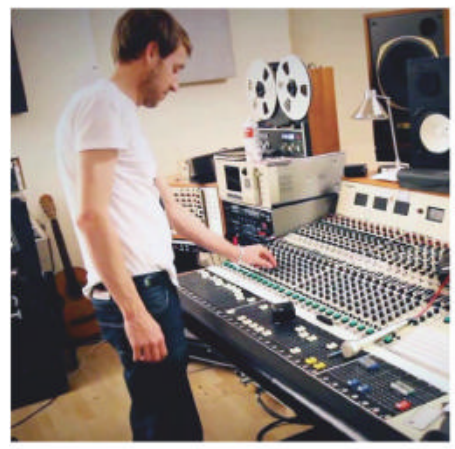
"I think the skill set of a good producer is choosing complementary personalities," says Pelanconi. "And, in the end, I would quite happily say I was the weakest link in the chain. And that's how it should be."

Ever humble, Pelanconi, was nevertheless gifted in the subtle art of the 'push and pull' – that magic balance in reggae where everything sits perfectly in the mix.

"When people talk about the nice feel of my records, it's because of that groove factor," he says. "It's about that feeling. And it comes from the technique of pushing and pulling and the syncopation with how things like the piano and guitar chops work together. You need all the elements within the bar and the groove to have that movement. And I find that this energy, especially with reggae, is most crucial."

Words by Roy Spencer

Track by track with **Prince Fatty**



"With all the music in my heart, it's not good to use a metronome. I get it when you have to use one – I understand the practical requirements. But, I think if you've got a good drummer, he's your metronome. It makes a big difference"

Right now Prince Fatty is busy teaching audio production. He's also building a studio above the Fox & Firkin in Lewisham, full of vintage gear, and an echo chamber in the stairwell.

Production-wise he's working with Shniece McMenamin on her solo album, out later this year. And he's getting ready to drop more exclusive dub samples and stems on his own website.

And, if that's not enough, his new afro tropical funk label, Manga Rosa, will be firing this year, with material from the late Tony Allen.

Dry Your Tears

"There's a few versions of this song. Bruce Ruffin did the original, and it's a beautiful track. Then King Tubby did a version later with Tinga Stewart, which was kind of a sound system, '80s cut. Both are wicked in their own way.

"I got Winston Francis on this version, and he knew Bruce Ruffin, so it was all cool. I like to ask people's permission, just to make sure they don't mind.

"Bruce's version is very slow, and for real old-school Jamaican people. But, it was a bit too slow for me to DJ with. And I was like, 'OK, I need it to add some old-school, like the Bruce Ruffin version, but I want it to have the same swing and energy as the Tubby version, even though that is kind of more programmed'. That was my mindset – sort of bridging the gap between the two versions."

Still I Wanna Love You

"This was me trying to challenge myself. And me and Horsemen love Studio One. And those grooves are actually the hardest and toughest to play, because the swing that the musicians had back in that time was wonderful. I think it's because they obviously had to learn how to play jazz and ragtime music, and all these super old traditional things, and so they really understood swing. So, I was like, I want to get something that's got that kind of feeling.

"And I got Little Roy in, and he had the idea for the lyrics. And then Alcapone had come round to cut some dubplates and jumped on it, too. And then, blam! It just came out very spontaneous."

Shimmy Shimmy Ya

"Me and Horseman did this because Ol' Dirty had passed away, and we loved him. So, that's why we did this track. Because I felt that when he passed it was like it's the end of the old-school hip-hop era. Just like maybe when Elvis passed away. Everyone was, 'OK, that's the old-school quiff, rock 'n' roll, over,' or whatever.

"We used to hold a one minute silence for ODB in the club. For months we did that. Literally because Horseman loved him, too. So, we did that, and literally we've got a 2,000 capacity venue, dead silent for a minute. And we run this version of the tune and it just erupts.

"It was for ODB. And also to have tracks that no one else had. And then as I use them, I release them, and then I replaced them with new ones in the set."

That Very Night In Dub

"This is one of my favourite tracks. The vocal from Holly Cook is actually quite special, I think, on that song. Like, it is quite technical as well, with the pitch in what she's doing. And it sounds easy – like, it's not. You know what I mean?

"There's some good technique, so when I popped the dub of that I was like, 'OK, that one's coming to me, you know? Thank you!' [*laughs*]

"Me and Holly were both on the Mr Bongo label, as well. I think that we helped revitalise Bongo, because basically all their other artists are dead. We were the only ones that were alive. And we were the only ones popping out wanting to go do shows or go to festivals, and so it was nice. And they're big reggae fans anyway, which is cool, as you have to be."

Need Some Lovin

"Around that time no one was really interested in the lovers rock, right? Without boasting or anything, I was the one put that back, because no one was interested in that. There was a little lull in that period, I think.

"There was a difference between what we were doing and what the Jamaicans were doing. Because then the Jamaicans soon after that went back to being old-school, which was nice, if you see what I mean with Protoje, Chronixx, you know, bringing bands back, and all this kind of thing.

"The vibe with Little Roy on this is that lovers rock. And, obviously, with Little Roy being on that rootsy vibe, that's him being natural, too."

Bedroom Eyes Dub

"Natty on this one. I'd mixed his first album when he was signed to Atlantic. I'd always liked him, respected him.

"This was actually a remix to one of his songs, *Bedroom Eyes*, that we'd done. But, I think the record company were like, 'Oh, it's too Jamaican and reggae', or whatever. I was like, 'Cool. If you don't mind, can I release the dub of it?' And they were like, 'Sure'.

"Generally, I think that the vocal versions do their thing for sure, obviously. But, the dub… as soon as you break down the vocal arrangement, suddenly, you're opening up the instrumentation and the echoes.

"This one is more a Channel One kind of style with the stepper's beat kind of thing. And, basically, doing the kind of mixes that the record company wouldn't allow us to do.

"It was the same when I mixed Lily Allen, you know? They didn't think it would sell. It did 2.5 million."

Ain't Got It

"That's an old Curtis Mayfield song. So, Curtis Mayfield is my favourite artist. Musically, spiritually, and his influence, and all these things. I think he's amazing. Love it. And Norman Whitfield is one of my favourite producers. He worked with The Temptations, Undisputed Truth. Which is why I like echoes, because he really liked delays. So, when it came to this track I was like, 'What would it be like as a Curtis Mayfield, Norman Whitfield, Jackie Mittoo kind of fusion thing?' Then, with the organ, because I love the Hammond, anyway.

"Yeah, that's really where we're coming from, you know? It sounds more psychedelic and blues. And, honestly, Horseman is one of the baddest drummers on the planet on this, too. He's really musical, rhythmical, bouncy… And there's a million words to describe him. But, he is very, very special, you know?"

> "PEOPLE GET OBSESSED OVER EQUIPMENT. BUT, ACTUALLY, IT REALLY IS ALL ABOUT THE PLAYER"

Christopher Columbus

"This is another monster roots classic, from the Mighty Diamonds. I love them. But, I've never found a good sound system cut of this tune. So, I thought, I need to have classics that people know and recognise, but stuff that I can quickly cut the vocal from, and then just go back to the instrumental. So, while we're going live, Horseman can just freestyle and MC over the top.

"I just needed more tracks like that. And it came out really nice, with a different feeling.

"It's really personality driven. So, when we put people together, even though it's another song and another version or whatever, it's always going to sound different. And this is the power musicians have, you know?"

Come On Girl Disco Mix

"Winston Francis and Horseman, again. Great artists. People get obsessed over equipment. But, actually, it really is all about the player, if you see what I mean? And we all underestimate that. So, when we listen to a record and go, 'Amazing. It was done with a Neve.' But the Neve isn't gonna give you the music. The Neve is just there to record it. It isn't the one that's swinging or playing a dirty funky groove that's just killing you. We underestimate that people are very clever. And putting good people together – good producers do that."

Roof Over My Dub

"Little Roy on this one. I had a good, good relationship with him because I'd met him in Brixton, back in the day. What people don't realise about me is that I was working in the reggae studios as a kid in Brixton. A lot of these guys I've known for a long time.

"I used to go help out in Acre Lane in Brixton in a studio called Lion Music. And they had a little label and studio down there. And the engineers kept disconnecting things, and not reconnecting them. So, the studio manager was calling me like once a week, going off, 'Channel 14 on the tape machine isn't working'. So, I'd just jump on the bus and go down and sort it out.

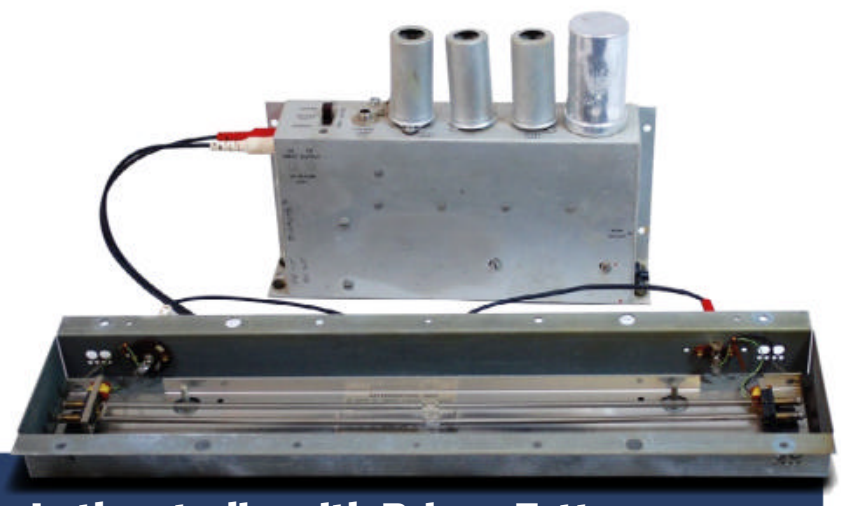
"So, getting Little Roy on a track like this was great, because we go way back."

Insane In The Brain

"This came about because we were playing a gig with Madness. And every time we're going to play with them they're like, 'Oh! How are you going to mash us this time?' As we always come with our own version of a track to play at the shows.

"I grew up with hip-hop and reggae. And I got into funk from reverse engineering the hip-hop. I'd always loved Cypress Hill, so wanted to cover this tune, too.

"It was crazy because when I went to LA to do some shows, DJ Muggs from the group came down and he told me he'd actually bought copies of this 45 to send everyone for Christmas the year it came out, which blew me away." FM



In the studio with Prince Fatty

"I used Fish Factory Studios in Willesden to record, which had an old Neve console set up by Antonio [Feola]. I think it was a 51 series. It was a traditional old-school studio setup with a 16-track tape machine. So, two inch, just the desk, and good microphones – Neumanns, AKG, Sennheiser, and so on. But, generally, standard '70s and '80s studio microphones.

"The room was nice. I liked to record everybody together. I don't really care about the bleed too much, as long as it's not overpowering.

"I had spring reverbs, and the same reverb King Tubby used, which is called the Fisher Space Expander. That's a tube reverb. You have to modify it, though.

"Then it was mixed in Brighton on my analogue equipment. I used a modified ReVox for tape echo.

"Generally, I tended to just use plugins for a little EQ, because on my desk at the time the EQ was very limited, as I was using an old BBC board, and the high end and the bottom end were fixed."

WANT TO KNOW MORE?

For everything bubbling in his world, including hot sample packs and new music, click: **princefatty.co.uk**

LIKE IT? TRY THESE...

Various Artists
Pirates Choice

Cracking Studio One comp of roots vibes. Perfect mood music to complement Fatty's vintage touch.

ADD THESE TO YOUR PLAYLIST:
Sugar Minott – Love Gonna Pick You Up, Carlton & The Shoes – Love Me Forever, Burning Spear – This Population

Hollie Cook
Hollie Cook

Longtime collaborator stretches out on her solo album, with Fatty on the boards, and dub and lovers rock on the table.

ADD THESE TO YOUR PLAYLIST:
Milk And Honey, That Very Night, It's So Different Here

Norman Whitfield
The Songs Of Norman Whitfield

Collection of killer tracks from the highly influential producer whose echo and delay work inspired a lot reggae of come.

ADD THESE TO YOUR PLAYLIST:
Ain't No Sun, Since You've Been Gone, Ball Of Confusion (That's What The World Is Today), Psychedelic Shack

Little Roy
Battle For Seattle

Unsurprisingly amazing mash-up of reggae music, Nirvana lyrics, and the voice of the Supersize guest star.

ADD THESE TO YOUR PLAYLIST:
Heart-shaped Box, Very Ape, Come As You Are

Prince Fatty
In The Viper's Shadow

2019 LP featuring the all-star cast of Shniece McMenamin, Early Sixteen, Dub Judah, Winston Francis, Horseman, and more.

ADD THESE TO YOUR PLAYLIST:
Two Timer, Get Ready, Steppin' Out Of Babylon

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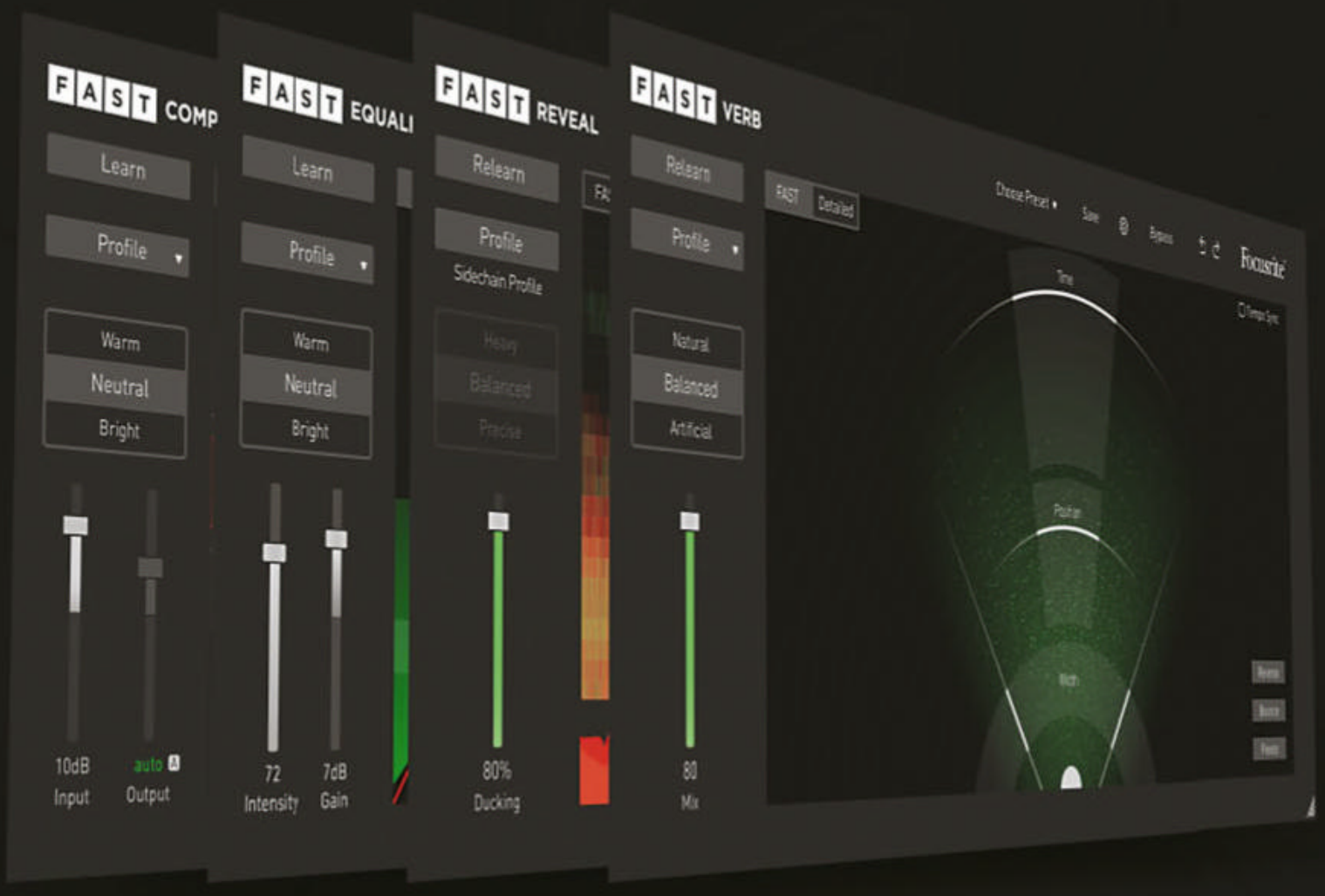

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Cate Le Bon
Pompeii

Mexican Summer

Two years on from 2019's excellent *Reward*, leftfield-indie-pop stalwart Cate Le Bon returns with her bold and playful sixth studio album, *Pompeii*. The enigmatic Welsh artist, who has produced albums for Deerhunter, John Grant, Devendra Banhart and more over the last few years, in addition to her own spellbinding, oddball workouts, is at her wonderful and dreamy best for the new record. *Pompeii* is perhaps Le Bon's boldest, most expressive record to date. It is full of the woozy, wonky pop aesthetic that the Welsh maestro has perfected, but it is pushed out to further extremes than before and the result is a brilliantly witty album that feels as surreal as it does warm and familiar. Intricate guitar lines sprawl over foggy atmospheres, shimmering synths, simple but addictive basslines, glowing melodies, curious folk stylings and Le Bon's ever-alluring vocals. The whole record has a playful feel, but it is also bold and full of swagger; a joyous journey of escapism into the visceral imagined world of Cate Le Bon. Having played all the instruments on the record herself (besides the drums and sax) and recorded mostly by herself too, *Pompeii* is her most idiosyncratic release yet. It also gives us an insight into the workings of her endless creativity. Full of freedom and improvisation, this feels like a pathless stroll around the inside of her brain. A brilliantly unpredictable, timeless soundscape that feels both otherworldly and familiar, *Pompeii* is Le Bon's finest work to date. ***Tom Jones***

ADD THESE TO YOUR PLAYLIST:

Dirt on the Bed, Moderation, Harbour

9/10

ALBUM OF THE MONTH

Madmess
Rebirth
Hassle Records

Rebirth is the loud, sprawling and intense debut album from London-based Portuguese psych rockers, Madmess. The band formed in Porto and cut their teeth based in an abandoned shopping centre that was turned into creative hub and studio and practice space by up to 300 musicians. Their time there was a definite impact on the outfit's diverse and genre cross-pollination that we see today. By 2017 bassist Vasco Vasconcelos, drummer Luis Moura and guitarist Ricardo Sampaio headed to London, where their debut EP gained a cult following. The debut album arrives at a time where it feels everything is coming together for the band. *Rebirth* is bold, loud, exciting, energetic and full of attitude. Heady psychedelia merges with sprawling stoner jams, chugging heavy rock and washed-out space rock to create a record that is as hard-edged as it is beautiful. Soaring guitar riffs wail over heavy drums, crashing waves of noise and sweeping, running basslines as Madmess create an epic sound that somehow manages to capture the essence of their exhilarating live shows. ***Tom Jones***

ADD THESE TO YOUR PLAYLIST:

Albatross, Rebirth, Shape Shifter

8/10

RECOMMENDED

Roedelius & Story
4 Hands
Erased Tapes

4 Hands is the beautiful collaborative album between two friends and piano lovers. Austria-based German composer Hans-Joachim Roedelius is an innovative and longstanding artist who has influenced generations of musicians in a career spanning more than a half-century. Tim Story is an American synthesist, pianist, composer and Grammy-nominated master of ambient compositions. But on *4 Hands*, they are just two longstanding friends, holding an intimate conversation in their most cherished medium, piano music. The record was made by Roedelius laying down short, intuitive piano sketches, which were then fleshed out and layered into Story's intricate work. Made on the same grand piano, both artists' work complements and accents the other, creating a wonderful conversation between the two that morphs into a singular and distinctive voice. There are minimalistic patterns alongside melodic sweeps, haunting, drifting keys and harmonic twists as the record continually makes subtle shifts. *4 Hands* is a beguiling and heart-warming experience. ***Tom Jones***

ADD THESE TO YOUR PLAYLIST:

Nurzu, Thrum, Ba

8/10

Niagara
Magna Moralia
Disciples

Magna Moralia is the serenely beautiful album of new age, astral electronic ambience from Portuguese trio, Niagara. After standout runs on both their native Lisbon's Principe Discos imprint and their self-released, homemade CD-Rs on their own Ascender label, the trio of António Arruda, Alberto Arruda and Sara Eckerson now find their home on London's forward-thinking Disciples for the new album. *Magna Moralia* merges elements of ambient, minimal, new age, classical and natural music into a wonderfully immersive and instinctual record. Dreamy piano improvisations are at the root of the album, sprouting from a lush and fertile web of layered, floating synth textures, tropical field recordings, subtle melodies, glassy electronics and arpeggiated tones. The whole record is a fascinating blending of the natural and synthetic, drawing on the sounds of the rainforest or the calmness of a silent temple alongside the neon, futurism of modernity. It is that natural and organic aesthetic that powers though, guiding us through entrancing soundscapes of kick-less drift and into a meditative, transcendental state. A record to feel and experience as much to listen to, *Magna Moralia* is a highly immersive album that blurs the lines between the conscious and subconscious. A masterwork of tropical ambience. ***Tom Jones***

ADD THESE TO YOUR PLAYLIST:

IV, VII, XIII

9/10

Update your production skills

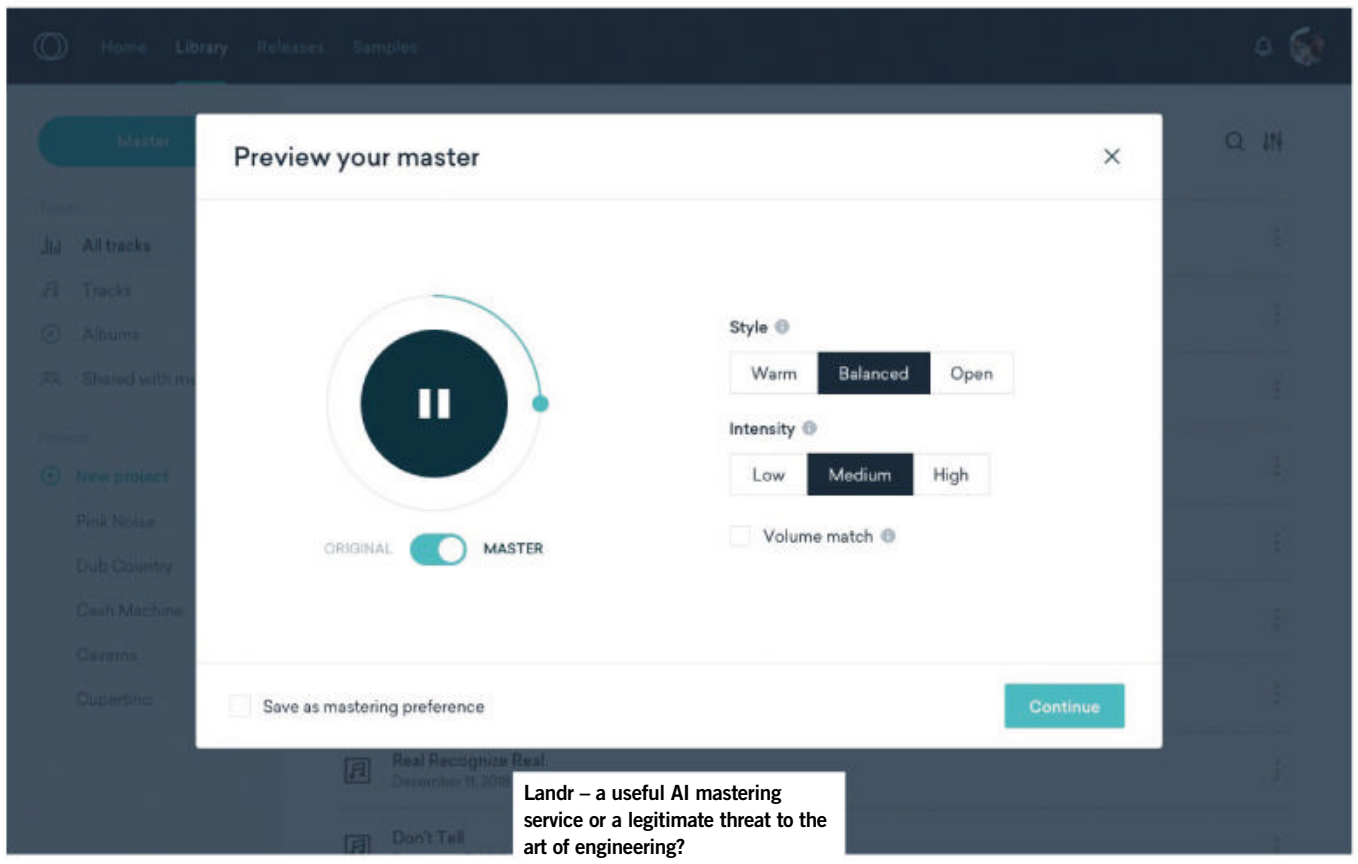
Give your music-making vocabulary a 2022 refresh!

Core music-making skills don't have a shelf life – if you could write, record and produce a great track in the past, those abilities are just as valid now as they ever were. Much like riding the proverbial bike. Those skills might still need a little updating though. Music technology – both in terms of how we make it, and how we listen – is changing all the time, and it's always worth keeping up with the latest developments.

Think of this article's selection of wisdom like a booster shot – to use an unfortunately topical analogy. We're not here to change the way you make music, but to update you on some of the trends likely to be prominent in 2022. We're starting with 'intelligent' mixing tools, before tackling the needs of releasing music on streaming services and the hot-as-hell subject of spatial audio. Let's get refreshed!

RISE OF THE MACHINES

When we talk about 'intelligent' or 'smart' plugins, we're generally using these as catch-all terms for a variety of technologies involving some combination of forensic audio analysis, artificial intelligence and machine learning. These are all terms that crop up in plugin promotional materials



Landr – a useful AI mastering service or a legitimate threat to the art of engineering?

with increasing regularity. Their proliferation is down to more than fashion though – these are technologies that make use of the increasing processing power of modern computers. They are processes that simply wouldn't have been feasible on home computers in the past.

Broadly speaking, these kinds of plugins are ones that can respond to context. Take an EQ as an example. Although a traditional EQ will let users boost or cut a variety of frequencies and may come stocked with presets aimed at specific types of material, the effect itself pays no heed to the material coming into the input – it simply applies a process as instructed. An 'intelligent' EQ, on the other hand, will 'listen' to the incoming audio and adapt its processes based on what it thinks necessary, such as boosting the top end on a vocal or adding punch to a kick.

These technologies all come down to training algorithms to find patterns. Machine learning involves, essentially, educating a plugin to recognise things so that it can make decisions on how to respond. Take a noise reduction tool like those in iZotope's RX, for example. It's ability to remove unwanted noise is based on the developers 'training' the algorithm to differentiate between desirable and undesirable elements of an audio file. Armed with this knowledge it can break the file down into very small elements and make decisions on what to keep and what to remove.

To some, these kinds of technologies hold a lot of negative connotations. It's easy to write off smart plugins as 'automated' music-making tools – ones that take the human skill out of music production. Probably the most controversial is Landr, the AI-based online mastering service that claims to be able to provide a service traditionally seen as a 'dark art' requiring years of training and a studio full of vintage gear.

At their best, AI-powered plugins tend to support the creative decisions of the music maker, rather than attempt to overrule them. In the case of mixing tools, the tech is best thought of as a modern take on the usual stock presets found in many plugins. As you might turn to a 'kick insert' preset in a compressor plugin as a starting point, a smart plugin's AI-powered compressor settings for your kick will likely provide a rough, convenient approximation of what's needed that the user can adjust to taste.

TO SOME, THESE KINDS OF TECHNOLOGIES HOLD A LOT OF NEGATIVE CONNOTATIONS

INTELLIGENT PLUGINS THAT LIVE UP TO THEIR NAME...

3 smart creative tools

Audiomodern
Playbeat 3

With Playbeat, Audiomodern apply an algorithm-driven approach to drum sequencing. On the surface, the plugin functions like a lot of other software drum machines. Users can import samples and sequence them across an eight-track step sequencer. There are parameters for varying pitch, level, flams, pan position, etc. Where Playbeat is unique, however, is in its algorithms that can be used to randomise or remix a pattern based on current groove. This is where the 'intelligent' element of design lies – rather than simply randomise hits and parameters, it makes creative decisions inspired by the existing pattern.

Algonaut Audio
Atlas 2

Atlas uses AI to take the pain out of wading through your unwieldy drum sample library. It works by analysing your sample folders and creating an elegant 'map' – coloured nodes that create clusters of samples grouped by sound-type and tone. Even if you import a disorganised bundle of one-shots, melodic sounds and loops, Atlas will filter the non-percussive sounds to leave neatly-organised 'maps' of beat hits. This functionality is paired with a slick, pad-focused drum machine and step sequencer. There's a good level of onboard sample editing too, and those smart features make it easy to swap sounds on-the-fly.

Baby Audio
TAIP

TAIP is an interesting marriage between modern tech and vintage effects. The concept itself is nothing new – a tape emulation that aims to impart the desirable inconsistencies of analogue tape machines. However, the approach taken is a little different. According to Baby Audio, rather than use straight DSP, TAIP makes use of AI/neural networks to "accurately decipher the sonic qualities that make a tape machine sound and behave in the way it does". This is done by feeding an algorithm with examples of dry and tape-processed audio in order for it to learn the precise differences between the 'analogue' and 'digital' versions of the audio.

3 intelligent mixing solutions

iZotope
RX 9

iZotope are relatively old hands when it comes to making use of AI and machine learning. You can find variations on these ideas present in Ozone's Mastering Assistant or the smart features of Neoverb. RX is probably the company's most powerful deployment of modern tech though. This audio restoration tool uses machine learning to offer smart suggestions on how to clean up and improve audio. It works remarkably well too (see our review of the latest version on p76). It's thanks to this tech that RX keeps getting more and more effective, making it a must for studio, TV and other audio editing applications.

Focusrite
The Collective FAST Plugins

Focusrite's recently-launched range of plugins are powered by tech from AI-specialists Sonible, whose Smart series of mixing tools could warrant inclusion in this list too. The reason we've opted for Focusrite's take, however, is that these tools are an excellent example of how – despite sounding complex – 'intelligent' features can actually help to make mixing tools far simpler and more user-friendly. The four plugins in the range, focusing on EQ, compression, reverb and spectral ducking, each use their AI tools to help apply context-specific presets that can gently steer even total beginners toward the right settings for the job.

Hit'n'Mix
RipX

RipX is divided into two versions – DeepRemix and DeepAudio. The former of these promises the ability to split a fully mixed and mastered audio file down into individual instrument stems. Does it always work perfectly? No. But it's still remarkably impressive, particularly when it comes to working with simple 'band' material (classic rock and pop tracks, for example). Its functionality relies on machine learning to intelligently identify different elements within an audio file. The pricier DeepRemix does the same, but adds some impressive editing tools too. We particularly like the ability to isolate and edit 'noise' elements.

Mix & master for streaming

Learn how the loudness rules have changed and get your tunes to make the grade online

For decades, many producers and engineers were locked in an arms race. From music's birth as a mass media product pressed to vinyl, through the CD revolution, the objective of many in the industry was to make each track as loud as possible – louder than the last, and loud enough to compete with the songs on the radio that came before and after. The loudness war escalated until 2010, when a new AES/EBU standard sought to impose a change for the quieter.

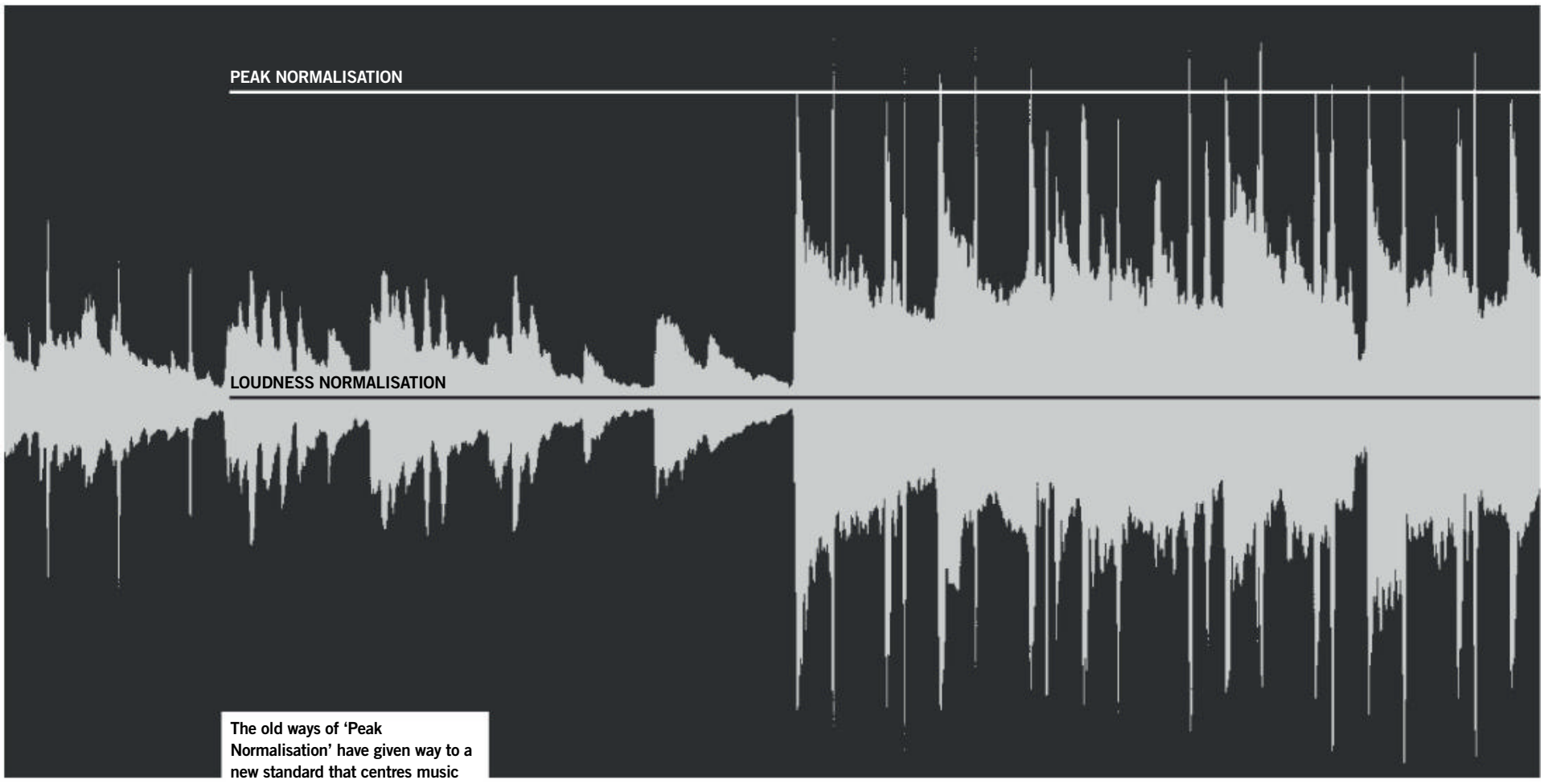
In short, today's streamed music standards leave far fewer incentives for musicians to squeeze a tune to within an inch of its life. Platforms such as YouTube, Spotify and Apple Music will actually analyse an uploaded track, turning down one that's 'coming in too hot', and turning up one that's a calmer, smoother mix with more dynamics.

For listeners, the result is a far more reliable listening experience. A death metal track can be followed by a smooth jazz tune, and theoretically there'll be no need to touch the volume control – the differences in average loudness of the two songs will have been compensated for by the streaming service behind the scenes.

For engineers, this new approach to loudness means that mastering is a more forgiving process. Instead of focusing on the commercial realities of loudness, more space is available for nuance and dynamic in the music. But how do these standards actually work? And how can you implement them in your music? Read on to find out.

THE DOCUMENT THAT STOPPED THE WAR

You'll have heard the terms Peak and RMS when referring to audio signal level. Peak is

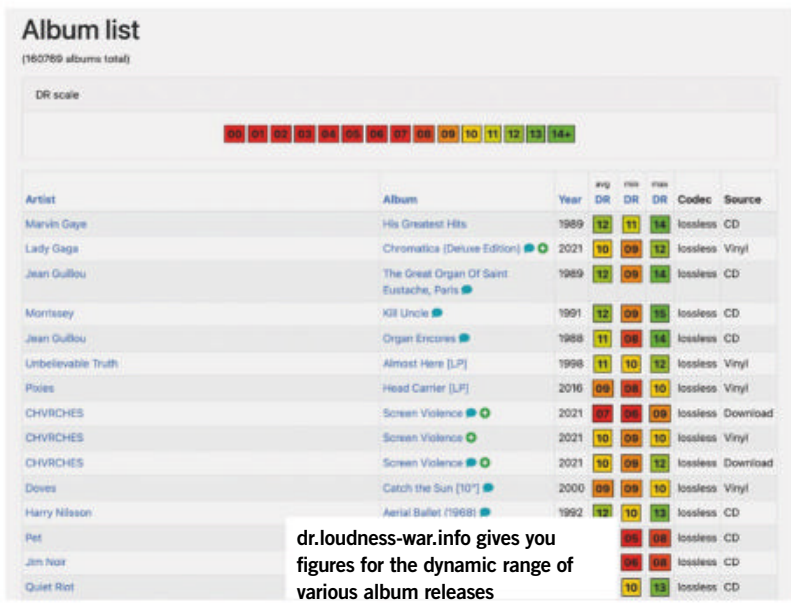


The old ways of 'Peak Normalisation' have given way to a new standard that centres music

the instantaneous maximum value of the signal – the highest point it has reached; while RMS provides a value for the average level of a signal over time. RMS gives a good representation of how loudness is experienced by humans; Peak tends to represent the maximum capacity of the system used to play it.

During the loudness wars, the highest peak was a set value. In the days of the CD, music was carried with an amplitude range across 16 bits. There was a definite peak level that a piece of digital music theoretically couldn't cross: when those 16 bits were full of 1s. With the Peak level set and unchangeable, the incentives were aligned for engineers to raise the RMS value as loud as they possibly could.

In 2010, the European Broadcasting Union issued EBU R 128, a recommendation for a system of Loudness Normalisation. This specified a way to measure the perceived loudness of an audio signal, and crucially, a target level for that signal. If a piece of music has an average loudness above that level, it is to be turned down; if below that level, it should be turned up.



dr.loudness-war.info gives you figures for the dynamic range of various album releases

STOP! IN THE NAME OF LUFS

The new system replacing RMS level (for our purposes here), is a system of Loudness Units (LU). The Full Scale value (LUFS) measures an absolute loudness and is referenced to 0dBFS. To get the actual measurement, the signal is K-weighted with a high-pass filter and a 4dB increase above 1kHz.

The EBU's recommendation is for streamed music to aim for a target level of -23 LUFS. Streaming platforms have got onboard with this somewhat, with Spotify and YouTube normalising to -14 LUFS, Apple Music to -16 LUFS, and Amazon normalising to between -9 and -13 LUFS.

DYNAMIC RANGE: THEN AND NOW

Before the R 128 standard, decades of squeezing music's dynamic range ended up leaving us very squashed. A look through the data on the website dr.loudness-war.info will give you a few figures to show the extent of the situation.

This resource lets you search for artists and albums – or simply check out all albums at once – and view their dynamic range stats with average, minimum and maximum figures. While not taking into account figures such as True Peak (discussed later) and exact LU, the amount of headroom left in the tracks by the people who worked on them still sheds some light on the state of the loudness wars.

Rarely do today's albums make it close to 14dB of dynamic range, a figure that the site gives as the ideal and measures with a green box. Scroll through your favourite artist's list of records, and you'll often see a whole sea of red. The site measures the masters of any album's vinyl, download and CD release separately, making it easy to note that vinyl releases often – although not always – offer more maximum dynamic range than their CD and download counterparts would.

Another interesting thing to rank is the differences in dynamic range over time, whether that's in new material, remasters, or simply work from different artists released at different times.

Take The Rolling Stones, for example – the site shows a steadily wide dynamic range (a sea of green) throughout the '70s and '80s, although the data is often taken from CD releases of albums recorded in earlier years.

Fast-forward to the mid-2000s, and the situation does start to change a certain amount, with the dynamic range of the band's music being squeezed. While there are some let-ups, the general trend from then on was for the recordings to reduce in dynamic range as time went on. These days, though, there's plenty of variation in the aging band's recordings, but no overwhelming resolution towards being over- or under- compressed.

It's important to remember that the dynamic range statistics don't measure loudness per se, but at the very least, the website is an interesting read.

PEAKING TOO EARLY

Despite the move away from using a signal's peak level as the be-all and end-all, the new loudness standards haven't ignored the concept. True Peak is a new way to measure the loudest points in the audio signal by recreating how a real, continuous audio signal actually behaves. MeterPlugs' Ian Kerr explains for us…

"A typical 'sample peak' meter will simply look at discrete samples to determine the peak level. The problem with this is that the samples may not have been taken when the continuous signal was at its peak, so in these cases the sample peak meter will report a lower peak level than the actual peak level.

"This can lead to problems further downstream when processing decisions are based on this 'faulty' peak level. For example, suppose a mastering engineer applies compression and limiting to track, aiming for a sample peak level of -1dB. It's entirely possible that the actual, continuous peak level will exceed 0dB in this case! When the track is ultimately converted back to a continuous signal for listening (by a digital to analogue Converter), this could lead to distortion and artefacts when the track is encoded.

"True Peak meters aim to mitigate this issue by detecting inter-sample peaks: the peaks that occur between discrete samples. They do this by upsampling the digital signal, from 48kHz to 192kHz, for example. This reduces the likelihood that a 'true' peak will be missed, or reduces the amount by which it is missed, at least. The result is that True Peak measurements more accurately reflect the actual peak levels than a sample-peak measurement."

> LOUDNESS MAY BE MEASURABLE, BUT OVER WHAT TIME SPAN WE DO IT CAN MAKE A DIFFERENCE

LOUDNESS RANGE ISSUES

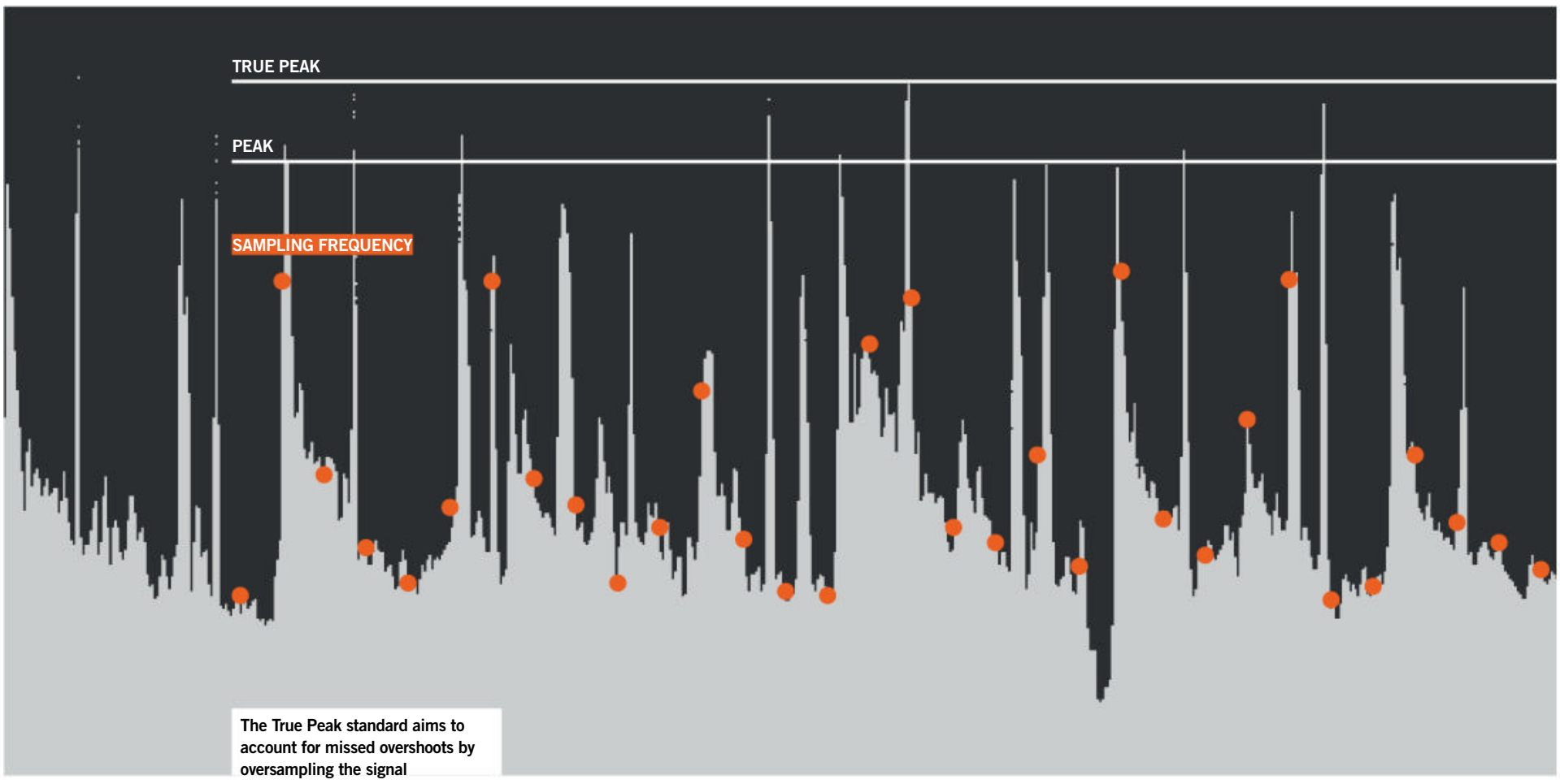
Loudness may be measurable, but over what time span we do it can make a difference. The EBU Mode specifies three sliding time windows over which to measure loudness. Momentary has a window of 400ms, which helps to meter transient and highly dynamic material; Short-term increases the window to 3s, giving a wider view of the loudness in a musical context; Integrated keeps track throughout an entire track, and can shed some light on the potential pitfalls of the new methods for working with loudness.

If LUFS and True Peak are taking the helm when it comes to measuring loudness, and are responsible for streaming services' fiddling with the volume of any track on playback, then how do we account for the fact that music changes in loudness throughout individual tracks?

This is measured with LRA, a Loudness Range number that describes the integrated difference in LU throughout a track. Let's say a piece of music starts with some ambient sounds and background noise, has a light, acoustic guitar intro and eventually builds to a momentous climax before bringing things right back down again – the LRA for this track would be relatively high. On the other hand, a modern techno tune without much variation may remain quite consistent across its length, which will then give us a lower LRA reading.

It seems streaming services are not currently responding to LRA when calibrating uploaded tracks, so even if a relatively small portion of the audio signal gets particularly loud, the entire track will be compensated for based on this one portion. Even the quieter parts will be turned down.

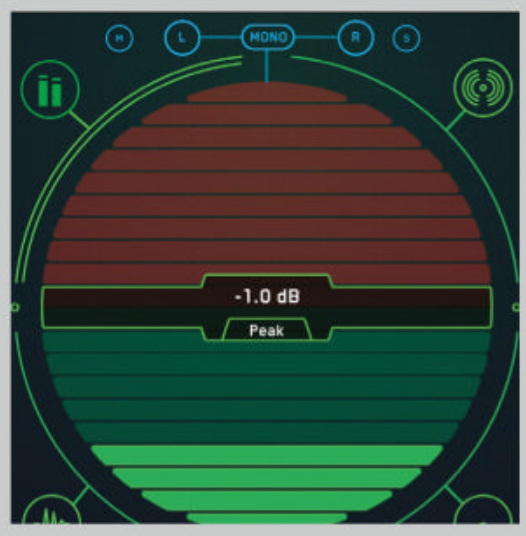
EBU R 128 may have established a steady peace after the loudness wars, but one unintended consequence is that it incentivises a reduction in the LRA throughout any given track, and so entire pieces of music may end up with fewer changes in loudness per section.



The True Peak standard aims to account for missed overshoots by oversampling the signal

Using Mastering The Mix Levels to prep a track for streaming

1 Let's put some of this mixing and mastering knowledge into practice. Here's Mastering The Mix's plugin Levels, which lets you know how your audio is shaping up against various commercial and theoretical standards. Levels goes on the master bus, after all processing.

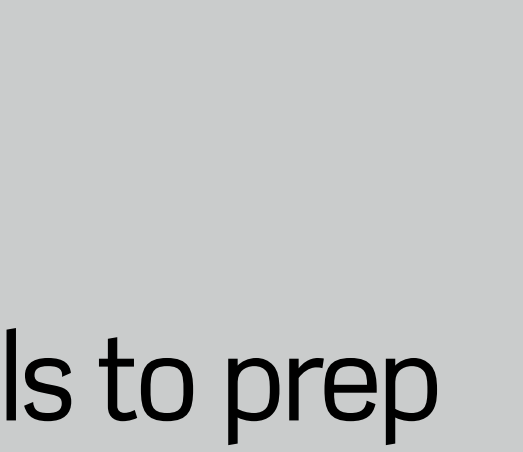


2 As we play our music back for the first time, we can see from the icons around the circle whether our track is shaping up at different times, or whether there are some issues. We'll head first for the Peak detector, which shows us that the mix is peaking at a nice, safe -1.0dB… or is it?

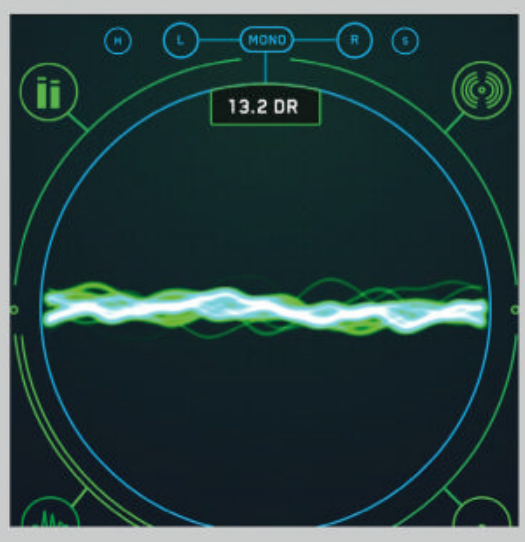
3 By switching to True Peak mode, we see that the signal is really peaking at -0.6 True Peak, which would usually cause it to be turned down until it reaches the desired -1.0. We can use this knowledge to reduce our transient levels, while leaving other, average-loudness-causing elements intact.

4 Now onto the other crucial part: the LUFS meter. Our track's Short reading (about a 3-second window) doesn't tickle the meter, hovering between -15 and -13 LUFS. This level is actually ideal, and would lead the track to sail through any streaming checks quite unharmed.

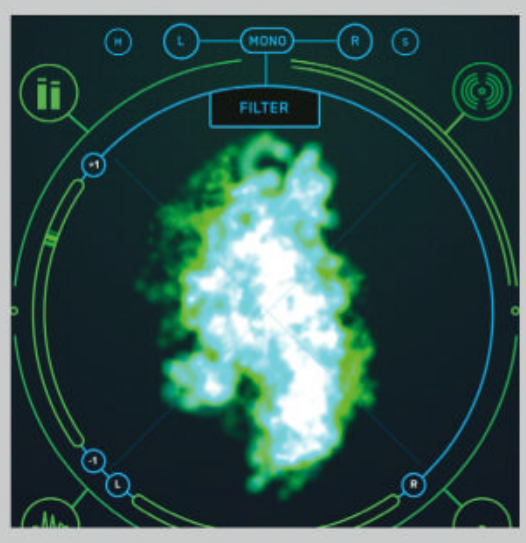
5 The Integrated reading for Levels' LUFS metering will give you an idea of the LUFS reading throughout the entire track. This can help get a decent reading, especially if the material from the start to the finish of the track varies heavily in its loudness.



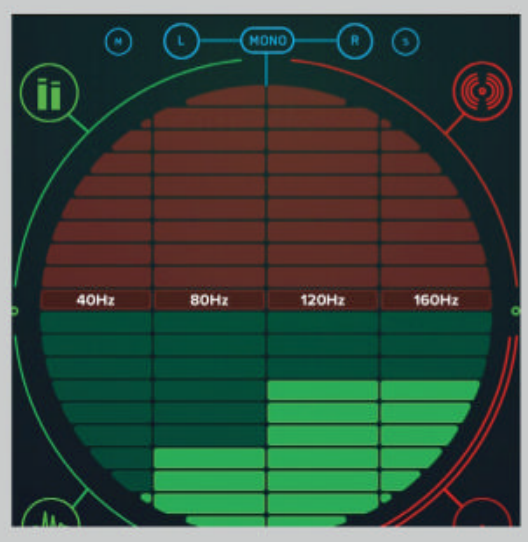
6 The LRA of a track tells you the difference in loudness between its loudest and quietest parts. Something to keep in mind, knowing that your loudest part will likely be the one that's calibrated to the target loudness of each streaming service, and the quieter parts could end up too quiet.



7 Dynamic range may not seem to be as important as it was now that we're in a world of LUFS, but the same guidelines as ever should apply: squeeze your track too much, regardless of the measure loudness, and transients will lose clarity.



8 Although the final two processors of Levels aren't necessarily anything to do with loudness as measured, they can still help at this stage. Stereo Field measures width, and phase coherence, and lets you apply low and high filters to mono the tops or bottoms of your track.



9 Bass Space, meanwhile, gives some insight on whether the higher track elements leave enough room for the kick and bass. You mute these two elements before doing the analysis. This knocks our Stereo Field reading out for the moment, but it'll come back with the full mix.

THREE MASTER TOOLS

Mastering the Mix Levels $69

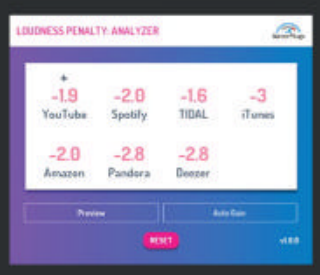
1 A simple way to gauge whether your mix or master is hitting various commercial targets or not, Levels puts several properties around its central display, and turns each icon green or red, depending on how it's going. If you're not measuring up in any area, you can get more info on why in the central readout.

masteringthemix.com

Youlean Loudness Meter 2 FREE/$47

2 One of the first great solutions to interrogating your mix as to its LU and True Peak, as well as other properties. Get the free version of Youlean's Loudness Meter, or plump for the pro.

youlean.co



MeterPlugs Loudness Penalty $49

3 Get a semi-instant recommendation on how much the different streaming services will turn down your track. Loudness Penalty analyses your current work and also keeps track of changing standards.

meterplugs.com

Spatial audio & Dolby Atmos

Learn how – and why – you should work with this increasingly usable system

We understand the world of stereo: the audio signal consists of two channels, and then differences in level between one signal appearing in both channels create the impression of the sound appearing from somewhere between the two speakers. Those levels can be changed and adapted, and a sonic object can be made to appear in any place along the line, or indeed move around it.

Dolby Atmos take this further. The concept is simple enough: instead of having just two speakers as in a stereo setup, or five speakers and a sub as in a 5.1 surround sound system, Dolby Atmos allows you to play back over whatever system you do have, and will decode the same signal differently, but with compatibility, which means that you can play a full-range Dolby Atmos mix both over a theatre setup or simply by using those two speakers in a home stereo formulation.

A Dolby Atmos setup is denoted by three numbers. While a classic surround setup may be called, say, "7.1", standing for seven speakers and a subwoofer, one example of a DA setup could be "7.1.2", allowing for two speakers placed as a stereo pair above the listener. So how does compatibility work with the system? And what's going on behind it?

The Dolby Atmos Music Panner is a free download but won't fully work without an encoder

HOW IT WORKS

Because Dolby Atmos will play back based on whatever speaker formulation the listener is using, the way it's handled by a mixing engineer must be all-encompassing, allowing room for translation. The way it's done is by mixing in a 360º 'dome' around the listener.

As shown in the tutorial on the following page, panning can be done using the Dolby Atmos Music Panner plugin, which allows sounds to be placed anywhere in a 360º circle, and to allow for their elevation as well. With the Panner plugin finished with over a full project, the positional values of each instance can be encoded, and then on playback an opposite system will decode these into audio signals that meaningfully convey the position on whatever the listener's system is using.

As for the console (or, more likely, the virtual-console) workflow, a typical Dolby Atmos project will have 64 channels, although 128 are possible. A 'Bed' is an output channel that corresponds to a single speaker in a particular Dolby Atmos system that the engineer is using to play the project back. In our tutorial project, these Beds take up ten channels: seven for the head-level speakers, one LFE channel, and two top-front speakers above the engineer.

The remaining 54 channels are taken up by 'Objects'. Each of these Objects is a pair of channels that can be given its own positional information. Using the Dolby Atmos Music Panner plugin, you can choose positional locations (or movements) for each of these different Objects, and their signals should, when encoded, then reach the Beds in the correct amounts.

Mixing spatial audio in Logic

You too can mix with 'stereo killer' Dolby Atmos. We reveal how in Logic 10.7

2022 marks a decade since Dolby Atmos first appeared in cinemas – the premiere of *Brave* in LA being its first outing in 2012. The technology uses a 128-channel system to deliver a totally immersive experience through multiple speaker arrays at an increasing number of your local Odeons.

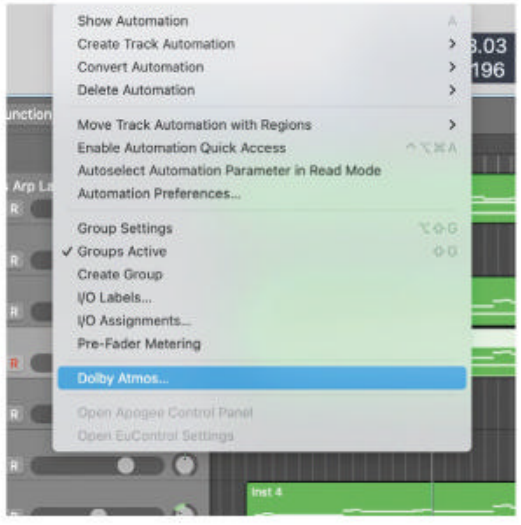
One of the main benefits of Dolby Atmos is its ability to decode these 128 channels and deliver an Atmos mix through everything from a more typical 7.1.4 speaker setup – seven speakers around you at ear level, one sub and four speakers above you to give you an impression of height – through to a set of headphones.

This flexibility means that the world of music production is waking up big time to Dolby Atmos and an increasing number of recording studios, including London's Dean Street, now have Dolby Atmos rooms. But it looks like Apple will be the ones credited for bringing Atmos to the masses. You can enjoy Dolby Atmos through Apple Music where songs mixed in it can now, as Apple say, "feel as though they're happening all around and above you".

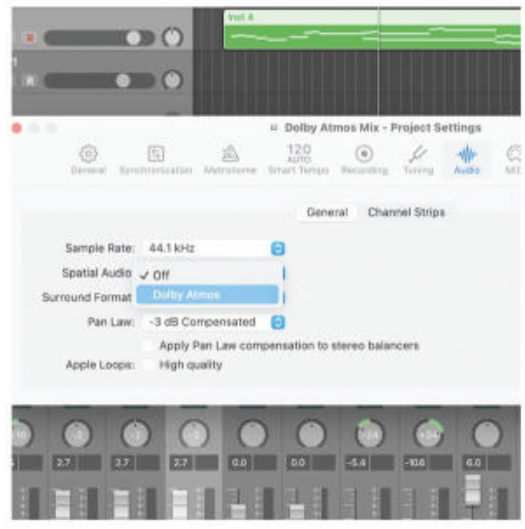
Artists including The Beatles (*Lucy In The Sky With Diamonds*) and Billy Eilish (*Ocean Eyes*) have some of the best examples so it's certainly being adopted by the big guns.

Now, though, with the release of Logic 10.7, the world of Dolby Atmos is very much open to producers of all levels, and as our tutorial proves, anyone can mix in Dolby Atmos…

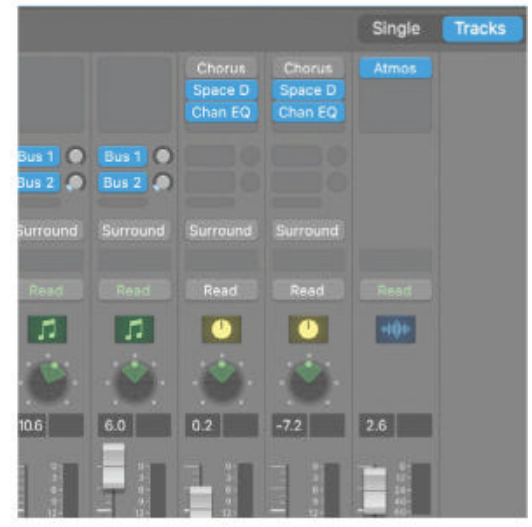
Getting started with Atmos in Logic



1 Say what you like about Apple but they do make tech easy to get your head around, or immerse yourself in. And Dolby Atmos mixing in Logic is straightforward. Take any mix you like, save it as another Dolby Atmos project and convert it via the Mix menu and the new Dolby Atmos option.

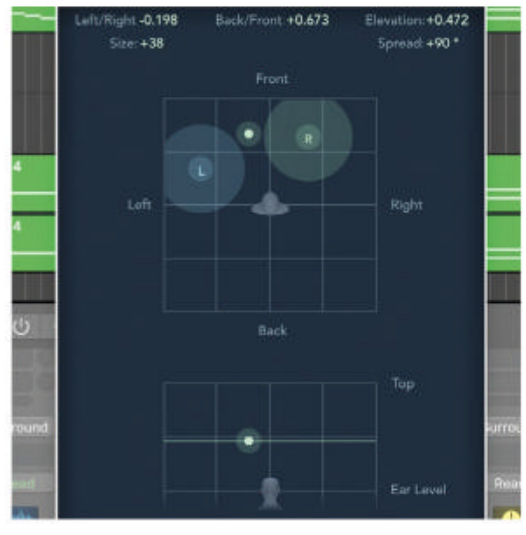


2 You then select Dolby Atmos from the dropdown Spatial Audio menu, again new to this version. You'll then be asked to confirm that you're cool with the project being converted to a 7.1.2 format. As you have saved it out as a new one, you're good to go so click 'OK'.

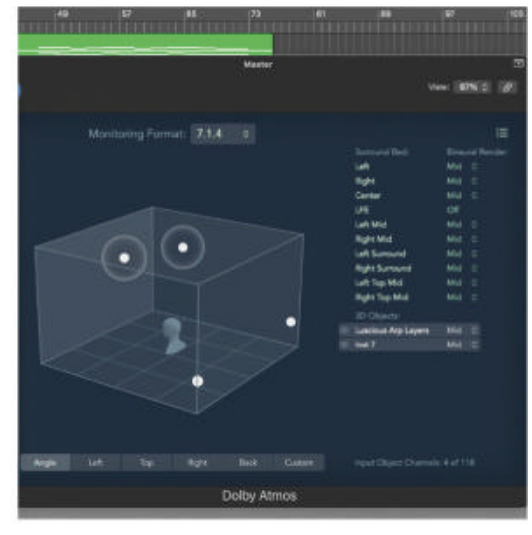


3 After a visual 'blink' several things have now occurred, the main ones being that an all-new Atmos plugin has been added to your master output and all of the regular stereo pan icons have been replaced with surround ones. The Surround Panner has been with Logic for a while…

4 … but it's the all-new 3D Object Panner that we're interested in here because, as well as the surround capabilities, it offers that y-axis vertical listening experience. Click on the Surround Output icon for a dropdown menu and select 3D Object Panner. Here's where the fun starts.

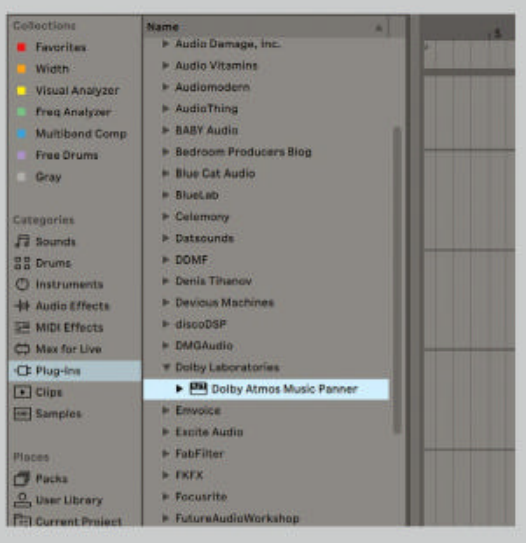


5 You can move your original left/right points around you and also, with the Size option, increase their presence in the 3D field. Raise the height up/down to place your sound above you and, best of all, enjoy all of this on any headphones, though the results differ depending on your cans.



6 Finally, the Atmos plugin. This shows the whole mix around a 3D head, with our two song tracks panned below/behind and above/to the front. As you move the 3D Object Panner on each track, the balls move in Atmos. Export your mix as an ADM-BWF file and all the Dolby Atmos data saves with it.

Working with Dolby Atmos Music Panner in any DAW

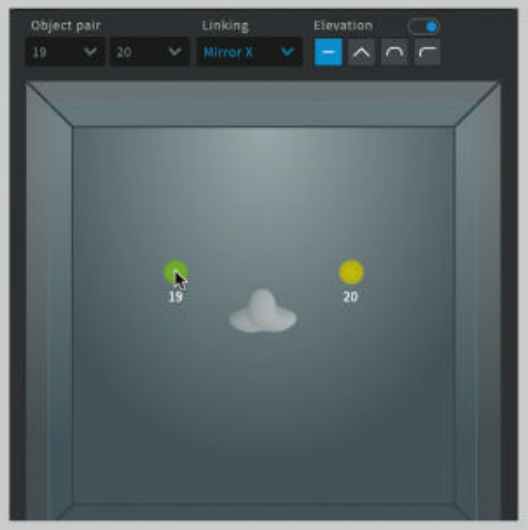


1 Let's have a look at how Dolby Atmos can be encoded in a DAW using the Dolby Atmos Music Panner plugin. The plugin is available in Audio Units, VST3 and AAX versions, and comes for free from Dolby's website. At the same time, you can install various template projects for a few of the major DAWs.

2 Here in Ableton Live, the template project loads up with ten mono tracks and 27 stereo ones (ie, 54 mono pairs). A copy of the Dolby Atmos Music Panner (VST) is loaded onto each of them, routed and ready to go.

3 The idea is that the ten mono tracks (the Beds) represent your system's outputs, while the remaining dual-channel pairs (the Objects) are where the setup work happens. You should adjust the Beds setup based on your playback system, and output each of its channels to the correct place.

4 Now for the Panner plugin. We add one mix element onto one of the Object channels, 19-20. Opening the plugin on that pair, we start moving the '19' and '20' pucks around the virtual listener's head mid-square. With a renderer connected, this will translate the positional information into the correct strength of signals.



5 Because this pair is in Mirror X linking mode, moving one puck will move the other in an equal and opposite direction. In other words, the two are mirrored as if there's a vertical line in the centre of the square. The pucks also show green and yellow in order to provide a form of metering for the audio coming in.

6 Alternatively, setting Linking to Mirror Y does the same thing as if a mirror is placed horizontally in the centre of the square (as pictured). Mirror XY mode does both, allowing the two members of the pair to be at opposing diagonals, front and back, or left and right… or anything in between.

7 We can alter an object's Z position using the knob below, bringing it higher up in the playback environment. This only works on a system with top speakers, of course. The Size control aims to make the virtual source appear larger, bringing on more speakers but still prioritising the selected direction.

8 Using the Elevation selector, you can choose a ceiling profile for the environment. By default, it's a flat line, and only your Z position tweaks matter. With a pitched or domed elevation selected, the object moves upward as different rates based on its difference from the centre.

9 At the bottom, the Sequencer can be activated to make impressive, moving effects. By clicking Edit, you can prime the interface to program movement shapes using the tools provided below. There's a lot to do here, although it may be more for movie sound than tasteful mixing practices! FM

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BONOBO

After years of touring, Simon Green found himself lacking creative stimulus. **Danny Turner** learns how modular synths fuelled his imagination

© Ye Rin Mok

Two decades into his career and Simon Green's Bonobo is still reaching previously unexplored heights. Having debuted with the downtempo, trip-hop vibe of *Animal Magic* in 2000, his multi-layered sample-based approach to production has enveloped jazz and world music styles, attracting numerous Grammy nominations. Mainstage performances at major festivals raised his profile further and he even climbed towards the upper reaches of the UK chart with his 2017 album, *Migration*.

Increasingly enmeshing electronics and live instrumentation, Green's onstage setup has become increasingly expansive. However, his gruelling live schedule took its toll. Stimulated by writing on the road, the pandemic now found Green wrestling with his own isolation and seeking impetus. Investigating the world of modular synthesis, on Bonobo's seventh album, *Fragments*, the producer's self-made systems coexist with live instrumentation, sample-based strings and upbeat rhythmic frameworks.

Your last album *Migration* was a top 5 hit. Does that sort of success hold meaning for you?

"I'm from a generation where the charts do mean something – back in the day I'd listen to the Top 40 on the radio every Sunday night. These days, it's all about the first week and whatever happens after that is fair game, so while that sort of success is not everything it is a nice thing to have on your metaphorical shelf."

Your debut album *Animal Magic* could definitively be described as trip-hop, but do you find these labels cease to apply within electronic music today?

"I've never been that fond of genre-assigning. Trip-hop was a very specific scene that was a lot narrower than people imagined. It went on for a few years in a few places, and I was definitely influenced by it, but by the time I started releasing stuff in the early 2000s there was this whole 'chillout' scene that I spent years trying to keep at arm's length. You get all these little micro-genres too, like vaporwave and chillstep, which are quite funny actually. Stick a 'wave' on anything and it seems to be a genre right now."

They come and go, but techno and house do look like they're set to last forever…

"Even more so than drum & bass, although it's something completely different now to what it was in the '90s. But yes, we're at a point where classic stuff from the techno era is becoming referential and people are starting to emulate it, especially the period when a lot of that music was made with all those little Roland boxes. It seems to be bigger than ever now."

We read that your touring schedule has been so relentless in recent years that you decided to give up your apartment and were technically homeless?

"My home base at the time was New York but my touring schedule for the year was so gruelling that I wasn't sure whether I was going to stay there or not, so I just put all my stuff in storage and gave up the apartment. I spent a year bouncing around between places, which was quite liberating and fun for a while, but not sustainable. I'm about to do it all again soon, so I'm a little apprehensive about how I approach touring. Having re-evaluated my relationship with playing live, I'm definitely going to nest a little more between shows and try not to burn myself out. On my last tour, if I had any days off I'd go out into the country or hike up a mountain, anything to get out of the environment of being on a bus or backstage at a venue."

When your career's at full throttle, is there an element of feeling obliged to perform lots of shows because you never know when it's all going to end?

"There's definitely an element of that, but you're also striving to push a project as far as you can take it. It's about taking opportunities, but you have to ask whether there's a benefit to accepting certain gigs or playing at certain festivals. I do enjoy it; there's an adrenaline rush that keeps you going, but then it's suddenly very strange to not be on tour. You almost feel like you've become institutionalised – like those people who come out of prison after a long stretch and don't know what to do so they end up going back in *[laughs]*. Since the pandemic, I've got into a routine and felt a little more settled and rooted for the first time in a while."

What impact do you think a heavy touring schedule has on artistic creativity?

"I find that being on tour and constantly moving is a very stimulating place to be creatively. It's where all the ideas happen, even if you don't necessarily have the means to communicate them. On the road, I'll work a lot on Ableton and always seem to find time to sketch out ideas. Right now, I have a studio in my house in Los Angeles that I'm slowly building up, but on my last record, *Migration*, I was writing stuff in the back of tour buses and at airport boarding gates. It was a surprisingly good way of working and the experiences I was having at the time were a valuable tool to getting my ideas moving. If I stay in one place, I find it harder to do that."

Were those Ableton sketches basic or were you importing a lot of plugins to help move them along?

"I mostly used Ableton's built-in plugins mixed with a certain amount of third-party stuff, but I've been getting into a lot of tape emulators this time to try to get things sounding a little more alive and applying modulation to stuff. I'd done some work on the *Fragments* album during 2019, but as 2020 progressed it ground to a halt because I wasn't feeling inspired. It was that paradox of having all the time in the world but nothing to say and I'd end up just nudging a kick drum around in Ableton for a few hours before going out for a walk. When thing started opening up, my creative gears started turning again and I finished the record this year."

Does the album title refer to psychological fragmentation or is it production-related?

"I've always worked in collage. I started from an MPC/hip-hop background, so the title's a literal thing that references collecting bits of audio, collaging sound on a macro and micro level and the way it's all put together. I never have expectations when I start an album – I don't know what I'm waiting for, so it's more a case of documenting whatever I'm listening to and how I'm feeling at the time."

Does spending more time in the studio inevitably lead to a better end product or does it just mean more procrastination?

"For me, the more time you spend in the studio the more likely you are to lose perspective. You often sit and listen to what you're making but have no idea how it really fits together or even what you're supposed to be doing, so distance is really important to figuring out what's actually happening. By taking the music out of the studio and going for a drive or putting on

headphones and going out for a walk, it gets re-contextualised and you can instantly hear what needs to be different."

We understand that using modular synthesis was the bedrock of your creative process on this occasion?

"I'd seen people use modular stuff and already had a good understanding of subtractive synthesis, so I felt like building a very expensive monosynth, but it was only when I saw people doing stuff with resonators, randomisation and probability that things got really interesting for me. With modular, I like the idea that you can establish a pattern and then decide which notes you want to configure a probability to by defining certain parameters. You still have control over the chaos, you're just asking for certain aspects to surprise you."

Have other artists inspired you through their use of modular?

"A lot of it was about doing deep dives on YouTube and watching people who weren't necessarily releasing music but doing inspiring things with modular. They helped me to discover sound capabilities that I didn't realise existed. Of course there are loads of great people out there making some really interesting music with modular, like JakoJako, James Holden and Kaitlyn Aurelia Smith."

Does modular enable you to move beyond writer's block?

"If I look at a piano I tend to reach for the same keys and progressions, whereas with modular you often don't even know what key you're in so you're doing it all by ear. That definitely enables you to come up with different melodic ideas you might not have thought of when using an instrument of choice. I just found the idea of building generative patches exciting, especially how resonators like Rings or the Qu-bit Surface module can sound like acoustic modelling. A lot of the Mutable Instruments stuff is amazing for that."

At the beginning, were there specific types of sounds you were looking for?

"You can make these very sparse, acoustic, plucked-sounding tones and melodic noises, and by pairing them with a sequencer, Euclidean rhythms and certain clocking methods, you can make a module spit out its own version of a melody that you put into it. There's so many ways you can expand and interact with that by clocking and sequencing other modules too. Back in the day I'd sample by digging through charity shop records, this time I'm sourcing stuff from little morning modular jams and using those."

What lay behind your initial choice of modules?

"It was trial and error – you get a few bits that people are excited about and then it's a case of living with them until you decide what you want to end up using. For me, I was more interested in using resonators and interesting delays like Make Noise's Morphagene and Mutable Instruments' Clouds. I moved away from the idea of building some big monosynth, because I'm not trying to make a full, multi-polyphonic album using modular. It's more about creating interesting parts and melodies, in the same way you would with a single instrument, whether it's an electric piano or guitar."

Have you benefitted from moving your creative impetus away from the laptop?

"With modular you can patch in quite complicated sounds that would take a lot longer and more mouse work on a laptop. I like the idea that a lot of these modules don't have menus and everything is tactile and responds to an LFO moving a VCA level or a filter. That's been an inspiring way of working and I feel that you've always got to have something that feels new and exciting to you. Going back to the very beginning, the idea of being able to loop a drum break on a sampler was a big wow moment for me, so I'm always looking for things that will get me excited about the process and I found that modular fit the bill this time around."

"IT WAS ONLY WHEN I SAW PEOPLE DOING STUFF WITH RESONATORS, RANDOMISATION AND PROBABILITY THAT THINGS GOT INTERESTING FOR ME"

So at present you're operating from a small Eurorack case?

"I have two actually, but they're not small *[laughs]*. One is based around Moog stuff like the Subharmonicon, Mother-32 and the DFAM percussion synth linked to some auxiliary LFOs, function generators and effects. The other rack comprises everything else, so a lot of the Mutable Instruments and Make Noise stuff and a lot of sequencers like ALM Busy Circuits Pamela's Workout, Turing Machine and resonators like 4ms. There's a lot going on in the second one."

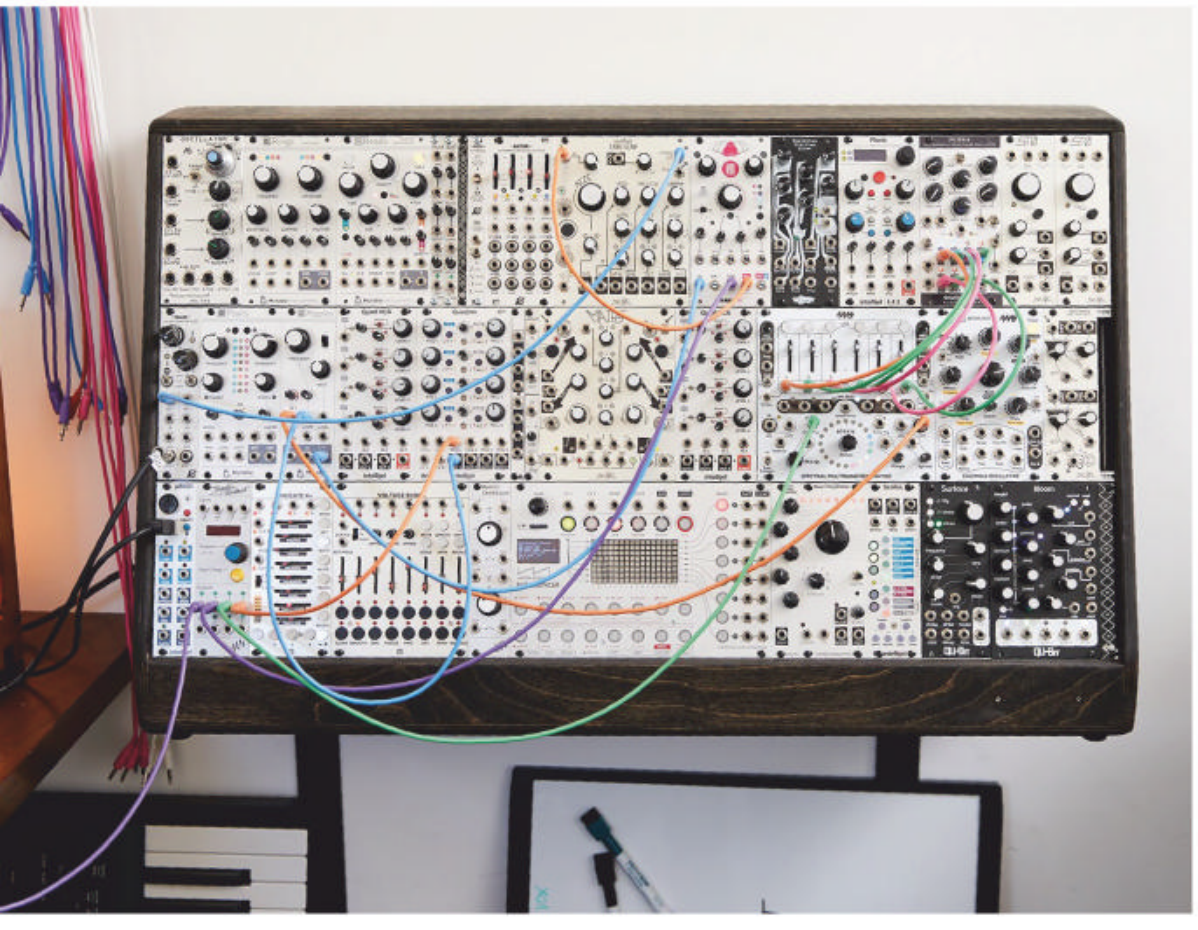
Are you processing the modular sounds or is that rather unnecessary?

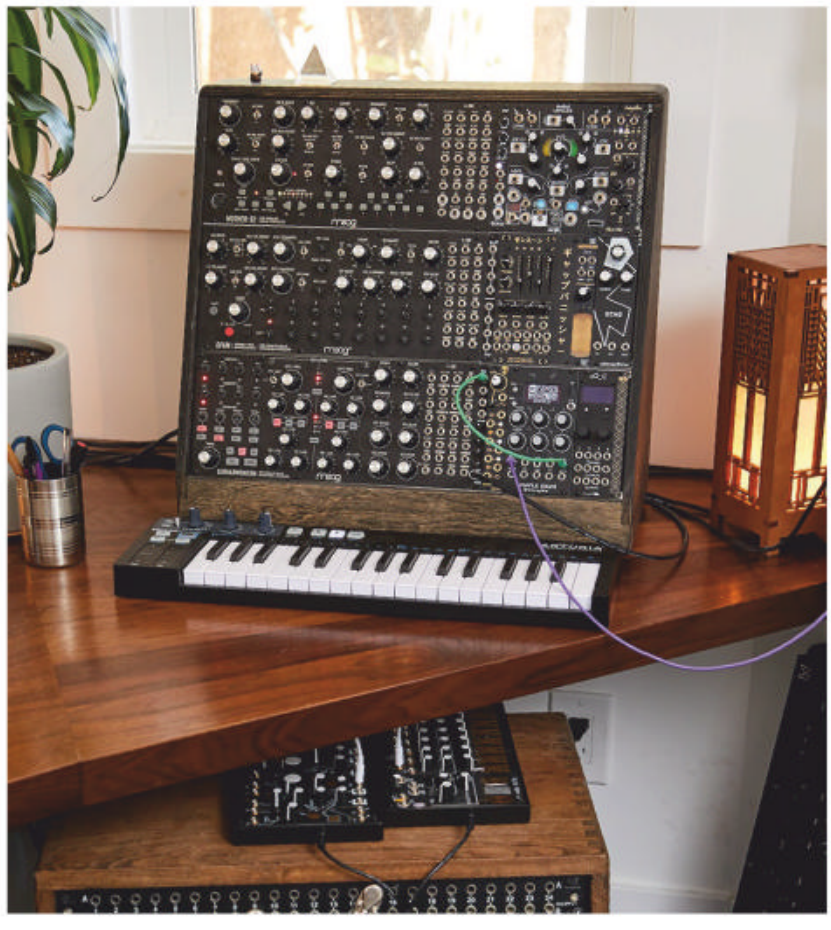
"I'm still processing sounds when I print them in Ableton, which gives me a second way to edit them. I tend to mix as I go anyway, so when I fit sounds into place that's invariably where they'll stay until the track's finished. In terms of processing, I've always used the Avalon VT-737 Channel Strip for pretty much everything, whether it's guitars or synths, but I

KORG Mono/Poly

Rhodes

SPACE ECHO RE-201
AVALON
KOMPLETE




moog

"AS MUCH AS YOU CAN EMULATE STRINGS WITH EXPRESSION CONTROLS, NOTHING CAN REALLY REPLACE THE HUMAN TOUCH IN MY OPINION"

Rhodes
Roland

recently picked up an NT-02A Overstayer Saturator, which is a dual-channel saturator and high-pass filter that gives you some really big bassy, resonant tones. If you get a couple of channels going through the modular, then it's already sounding beefy, but I find the saturator really warms sounds up as they come in through it."

We read that you sourced harp sounds from sessions with harpist Lara Somogyi. Why that particular instrument?

"When I'm sampling and flipping through folk records or spiritual jazz stuff, I feel like I'm always drawn towards harmonic, plucked textures. I met Lara through a mutual friend, Olafur Arnalds, who was in town playing a show and eventually became interested in working with her. We organised a session but rather than have Lara playing parts to ideas I already had, I just wanted to collect some textures. We did so much together that we basically made a sort of harp record as a starting point for sample sourcing, and a lot of that ended up on the album."

What was the setup for that session?

"Lara has a guitar that she uses for sample pack and library recordings, so she already had a pretty good setup. We just used a digital interface to get some interesting textures on the low end, a room mic and tracked the two channels. At first, she did some conventional harp playing and then we tried to do something a bit weirder, using kitchen utensils to hit the strings with, which was fun."

A lot of those sounds feature on the dreamy opener *Polyghost*, but what was Miguel Atwood-Ferguson's role on that track?

"I've been recording orchestral elements and woodwinds on every record since my third album *Days to Come*. Some of the libraries, like Spitfire and Slate + Ash, are incredible and back in the day I'd bulk up a lot of virtual sounds with MIDI and add some top lines with live instruments to give them flavour, but I liked the work Miguel had done with artists like Flying Lotus. He was one of the few people I managed to get in a room and hang out with during the pandemic, so he did the string arrangements on *Polyghost* and the big string parts at the end of *Tides* with Jamila Woods. His strings were originally in the body of the track, but they sounded so good that I ultimately turned the volume down on everything else and let them have their moment at the end."

Are virtual instruments a long way from competing with live instrumentation in your opinion?

"You can hit a keyboard chord and get a room sounding like it's full of musicians, and the articulation on some of these libraries is quite clever because the sounds do start to evolve, but as much as you can emulate strings with expression controls nothing can really replace the human touch in my opinion. One of the problems is that sample libraries are too big in terms of data, but additive synthesis will be able to do what they can within a fraction of the size, so I'm curious to see where that all goes eventually."

What other musicians did you invite to source acoustic sounds from and was that mostly accomplished by exchanging audio files?

"Miguel was often sending me bulks of a session, but I played a lot of electric piano, guitar and other bits and pieces myself so wasn't sourcing a huge amount from other people. I find it's better to work remotely because when you're in a room together the clock is always on, whereas if you leave people to do their

own thing and send stuff over, they have the space to stretch out and contribute in their own time. With the exception of Lara, I had a very firm idea of the parts I wanted, although sometimes it took a little finessing to chart the strings and get them to a place that would work for a string arrangement."

We read that you reached out to a number of vocal contributors but had a breakthrough moment with Jamila Woods when you received her vocal for *Tides*?

"We reached out to quite a few people who we were interested in contributing, but everyone seemed to be having a bit of a hard time and ended up doing their own thing. Jamila texted me one evening to tell me she'd recorded a vocal and she smashed it. It was actually the same take that ended up on the record and an inspiring moment because it told me I had something that was starting to resemble an album. Usually I have those moments quite early on, and it's easy to get into the rest of the record when you know you have a central tune or something you're really excited about."

The track *Otomo* has some really nice choral chanting. What's the story behind how the song came together with O'Flynn?

"The chants are an archived folk recording of a very old sample of a Bulgarian choir from the 1920s. It had loads of texture and a big reverb feel, which made me very excited about it, so I re-harmonised a few chords around the sample to see where it would go. At one point I was having a bit of trouble deciding where to take the track in terms of its arrangement, so I asked O'Flynn because I really like how he arranges his stuff and he ended up adding quite a lot."

"I KNOW A LOT OF PEOPLE DO BUT I NEVER START WITH DRUMS. I'LL START WITH EITHER A MELODIC OR POLYPHONIC SOUND OR TEXTURE"

Do you use beats as a tempo guide or are they built into the arrangements while a track's already underway?

"I know a lot of people do but I never start with drums. I'll start with either a melodic or polyphonic sound or texture and try to apply drums by pulling a rhythm out of those abstract shapes and seeing what they might suggest to me. I'll sometimes use the modular stuff for creating hi-hats, other times I'll use clips arranged in Ableton using some of the pads on a Drum Rack or get hold of an audio percussion sample and layer it all up. The key to my beat making is that there isn't really one place where all the drums are coming from and the lines become blurred between a percussive sound and one that's based on abstract sounds and textures."

Your beats have always been quite abstract and crunchy…

"I like using saturators and discovered the joys of distortion this time around. I use Soundtoys' Decapitator quite a lot to add character and ToneBoosters' ReelBus tape emulator, which glues everything together really nicely. I end up sticking that on a lot of channels because you can group drums through it to give them that nice crunch you mention. Ableton Drum Buss is another great tool for pulling out resonant thumps from a group of drums. Tuning percussion is definitely a big thing, but I just try to feel things out and tune them by ear. I also like the idea of experimenting and putting stuff through Ableton's warp engines and algorithms where you can detune things in a really nice way and make some of the sounds stand out a bit more."

Your live shows are quite distinct from the end product, especially as you use a live band. Presumably, you don't want to stick to the script?

"For me, playing live is a good way for the record to live in a different form, but I find that as the tour progresses, things change. A little accident might happen and that will become a big feature of a track the next night, so I welcome the idea of the live show evolving. I've got a slightly augmented version of the band that I used last time and I'm in the process of pulling the record apart to see how it might work on stage, but I like the idea of working with a stage full of people. You think you have an idea of how certain parts will come across when you give them to musicians to play, but they always surprise you."

To what extent are you balancing electronics with conventional instruments on stage?

"Ableton is a big part of it, so there's still a lot of electronics up there and I'm sure that there'll be a lot of modular as well, but there's a drummer, woodwind and keys and I play bass, some drum synths and do all the Ableton bits too. For a quite small show, the default is to have around six people on stage, for the bigger shows like the one we did at the Alexandra Palace we'll use a full orchestra and have a big visual video element too." FM

WANT TO KNOW MORE?

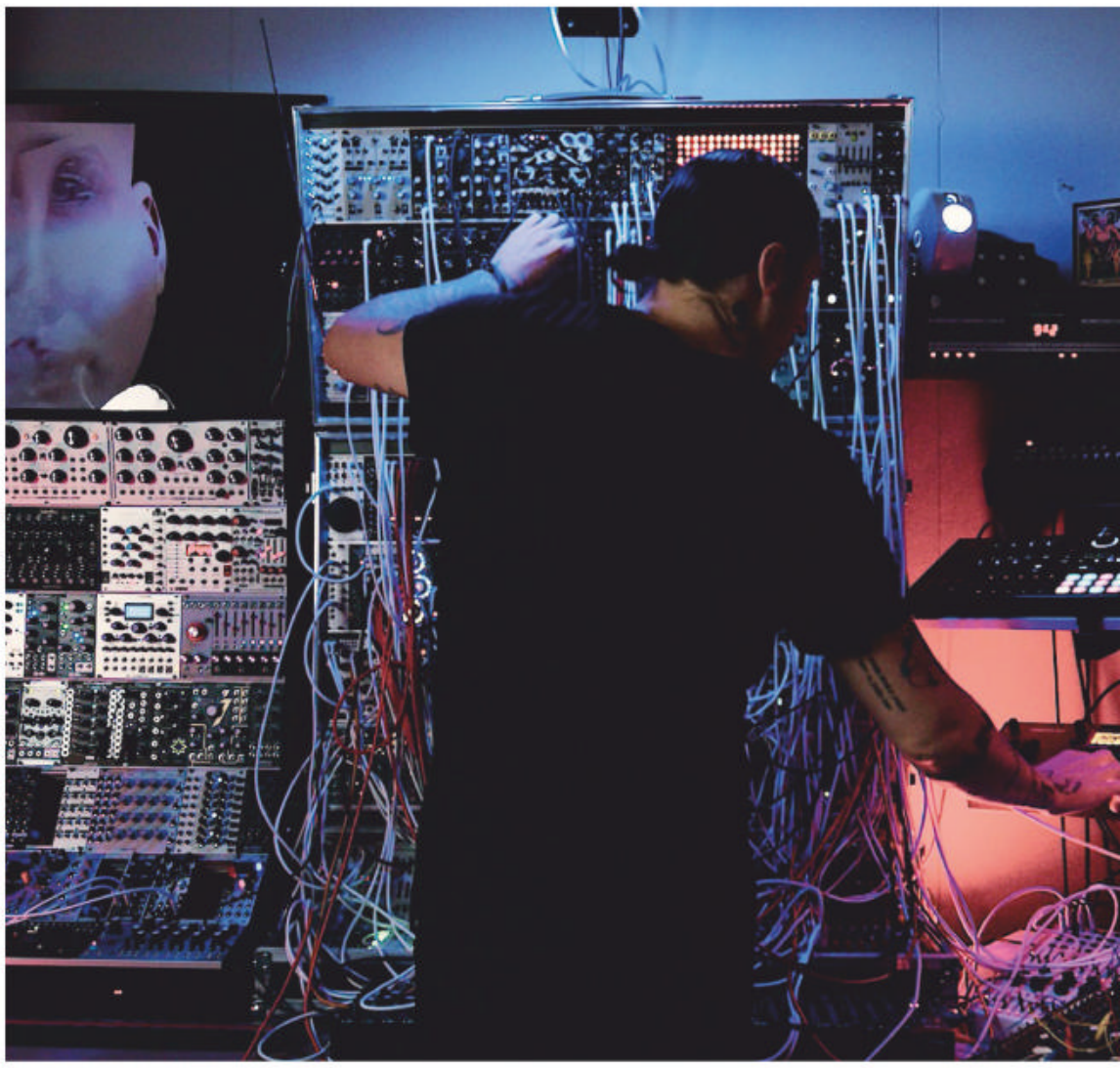
Bonobo's new album, *Fragments*, is released on 14 January on Ninja Tune. For more information, visit **bonobomusic.bandcamp.com/album/fragments**

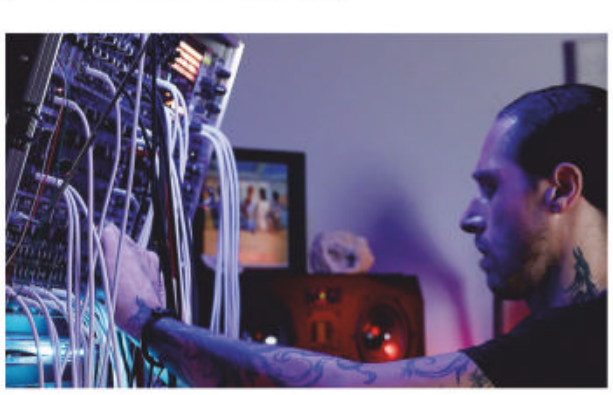
PRODUCE LIKE...

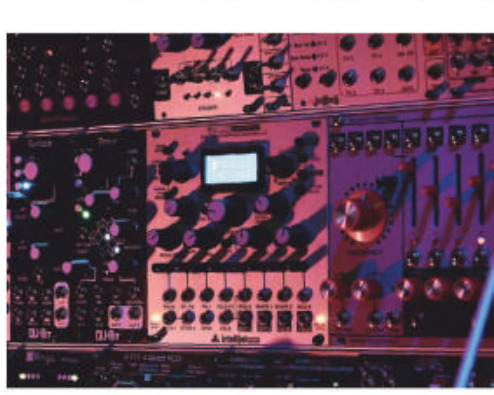
David Castellani

Get to know this LA techno mogul's modular-and-more setup – in gloriously nitpicky detail

Castellani has only been in the modular game for five years but his collection has blossomed since







LA-based, Italian-born techno producer David Castellani is a busy man. As a producer, he spent 2021 delivering a string of EPs of rolling, club-ready techno on his own Noetic label. Across tracks including the electro-tinged *Alpha Gamma* and the pulsing *Electrochemical*, he has defined a sound based around hard-hitting percussion and high-energy modular synth jams.

As extracurricular activities, Castellani also runs a clothing brand, After Infinite, and a newly launched modular company, Anti-Kulture, with his partner. We caught up with him to find out how he pieces together tracks and get a sneak peek of his debut module, the Precision Disruptor sequencer.

"THE ELEKTRON ANALOG KEYS CHANGED MY LIFE COMPLETELY"

What was your first introduction to making electronic music?

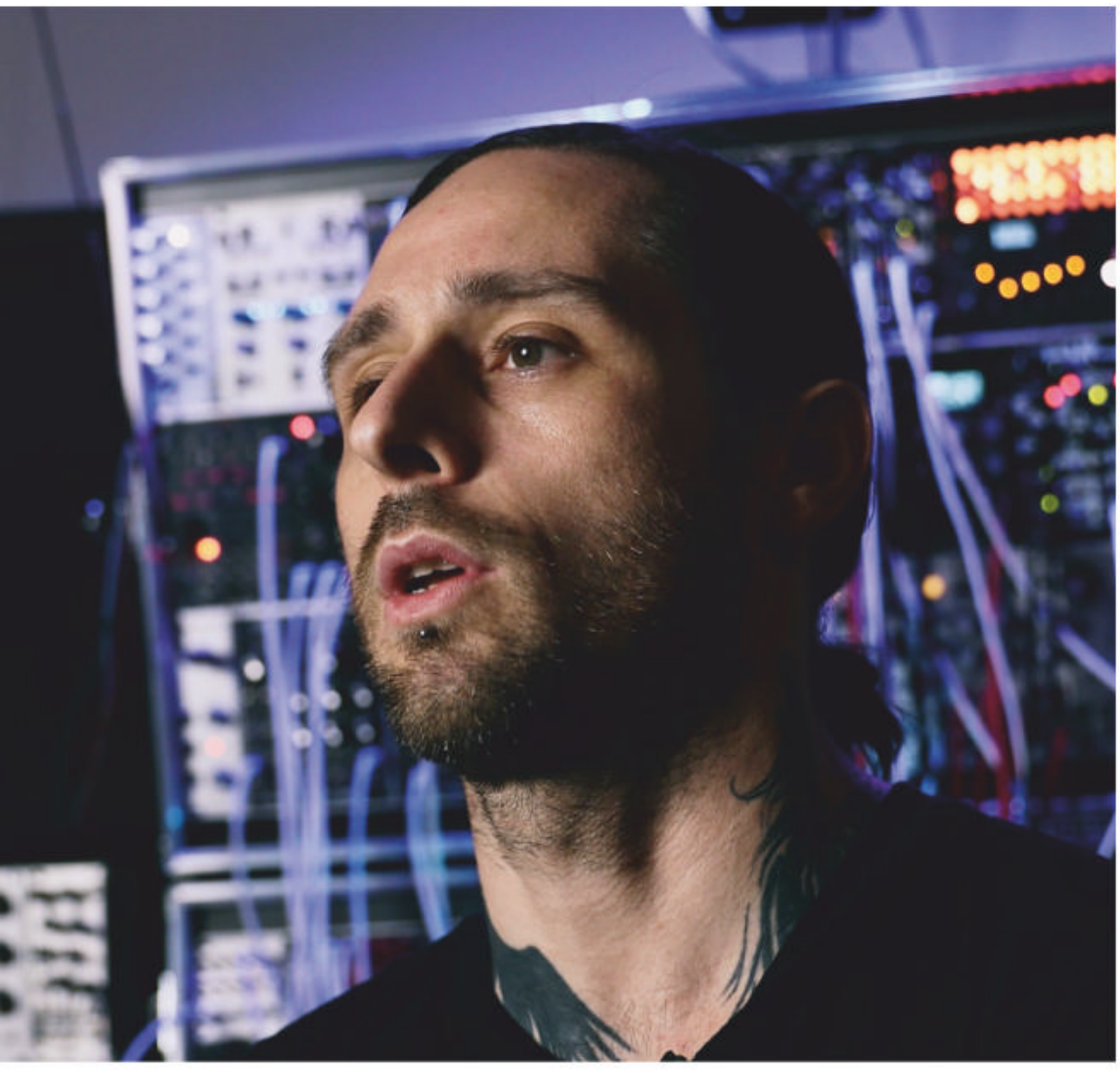
"One of the most significant moments in my electronic music-making past was when I got my first piece of hardware gear, the original Elektron Analog Keys. It changed my life completely. Having the tactile experience felt like I was connecting directly to the source and I was becoming an extension of the sound.

"It was both a source of creative inspiration and technical knowledge and through it I learned most of the concepts I now take with me everyday. I've actually gotta say that I am pretty disappointed that Elektron didn't update the MK2 with a keyboard version."

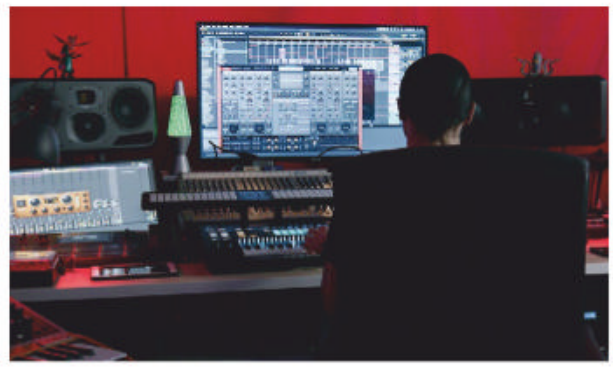
When did you discover modular synthesis? What drew you to it?

"I knew that there were sounds that could be obtained with modular synths that were out of reach with traditional hardware instruments, but it was only five years ago when I finally took the plunge and purchased my first set of modules.

"My very first buy was the Make Noise Shared System. I



Castellani believes that "it's the instruments that do the work" – but we sense he has more input than he lets on!



clearly remember looking at it and wondering how to use it. It was so beautifully constructed, yet still very foreign in many ways and it did not lend itself to instant results. Finally one night, I had an eight-hour marathon learning session on YouTube and then things really started to click."

You mention several modular sequencers in the video, but what are your other go-to modules?

"Oscillators are usually the modules I get most excited about. And to be honest, picking one feels a lot like neglect to the others. One of my favourite pairings is the Make Noise DPO alongside the RxMx. Together, those two are an overwhelming fountain of creativity and the results are astonishing. You can use them all across the frequency spectrum and for so many different purposes. I just love modules that I know can deliver something new every time I patch them up, it's always an exciting and satisfying process.

"As far as effects go, I am always looking for ways to push the sounds a bit further. I've recently fallen in love with the E520 by Synthesis Technology. It's got a considerable footprint but has so much to offer and I highly recommend it to anyone wanting to bend their sound."

What advice would you offer someone setting up their first modular system?

"One of the most important things to do when jumping into the modular world is having a proper understanding of synthesis. This will help you realise what components you will need and will help you figure out how the modules work.

"A clear understanding of the functions of utility modules, such as amplifiers and envelopes, is fundamental to building a modular system. Without them, you'll have little success obtaining the results you want. Today, we have so much information at our fingertips and education is waiting at every corner. Don't be afraid to dig for knowledge and look to others for guidance."

"DON'T BE AFRAID TO DIG FOR KNOWLEDGE AND LOOK TO OTHERS FOR GUIDANCE"

You've obviously got a gear-packed studio, but are there any dream bits of gear you want to add?

"Haha, all of them. My obsession with gear goes beyond their use and functionality. I have a deep love for how they all differ from one another. Each instrument has a unique way that it works and the sweet spot where it works best. This is something I love and something I'm always looking for in a new instrument.

"Once you find the soul of the instrument, you can easily imagine how it will fit into your music and will get the most out of its core. I tend to feel that it's often not me making the music, it's the instruments that create the music – I just caress them and they do the rest of the work."

Tell us about your new live setup – how much of a challenge has it been putting that together?

"My live setup mainly consists of my modular rig and I usually don't try hard to recreate my finished tracks back into my rig for performing. My main focus when performing live is having the freedom to be expressive and the fluidity to create a new experience every time that I perform.

"This usually means preparing the patches so I have all the tools I need at hand, but also the space to build the overall sound in any way I wish. My performance style depends on a lot of improvisation so it's vital I have all the tools I need ready to go. A fully completed patch with all the sounds necessary for a live set can take a week to set up and I generally play around with it for a month before I feel comfortable bringing it to the stage.

"The biggest challenge I've had through this process is making sure I have the proper monitoring when performing. If I can't hear what I am doing all the way to the little details, I will not be able to make the proper choices and won't find myself in the correct headspace to perform."

GET THAT SOUND...

Introducing the Anti-Kulture Precision Disruptor

VIDEO ON FILESILO

01 >

Precision Disruptor is the debut module from David's new Anti-Kulture brand. "It's a generative, random-based sequencer. It's a bit like a 303 sequencer but it has a few special features that we think are going to be really useful in the Eurorack world."

02 >

"On the little baby keyboard you have the ability to select the notes you'd like to include in the sequence," David explains. "Below the keyboard you also have an option to include octave ranges from 0 to +/-2."

03 >

The sequence itself is created by adjusting a bank of five sliders. "These are for gate, accent, slides, note and octave. When you push any one of the first three up they start populating the sequencer with events."

04 >

"The pitch sliders introduce extra notes based on what's been selected via the mini keyboard. With the note and octave sliders, as you push those up from 0 to 100, they'll start including anything beyond the root note and octave."

05

The final touch. "You have the Melodic and Groove Disrupt buttons. What these do is independently cycle either the melodic content or the rhythmic pattern." Pressing either button will shuffle the events around but keep parameter levels as set by the sliders.

DAVID CASTELLANI TRACK BUILDER...

Turning modular jams into club-ready techno

BEGINNINGS

VIDEO ON FILESILO

"I tend to begin with a kick drum and then jump to a lead sound rightaway. This is mainly because I find that the lead sound is the most important and should have the freedom to not be restricted by the other sounds. If other sounds are already there when I get to the lead, then it becomes limited in how far it can go.

"When it comes to specific modules, I try not to be predictable and reach for something different every time. This is actually at the core of my process because it keeps me excited and guessing for what will come next."

BUILDING A TRACK

"My music generally focuses on a main lead part, which will develop throughout the track and this usually makes the arranging more intuitive. If your main ideas are not developed enough or don't have the movement to keep them interesting, you tend to have to make up for it by adding more sounds and dramatic arrangement.

"I recommend really pushing the limits of your sounds and always having the control to mould and change them as the track progresses. This will give life to the music and make it much easier to keep things interesting."

HARDWARE VS SOFTWARE

"I love all the U-he software and think they are some of the highest quality plugins and they offer a ton of creative energy to my process. Though I use a lot of hardware, I strongly believe in using every tool at my disposal to get creativity flowing and results that I'm happy with. This means hardware, software, acoustic instruments, analogue, digital and anything else that I find to be valuable.

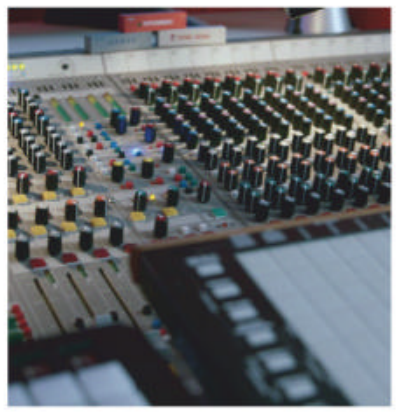
"Not only do these tools bring sonic value to my process, but also creative satisfaction in how they are used and how I interact with them when creating music. I'd say a very notable difference between a plugin and its hardware counterpart, aside from the actual sound, is the way my brain is stimulated when using them. A plugin offers immediacy and sometimes I want results quickly.

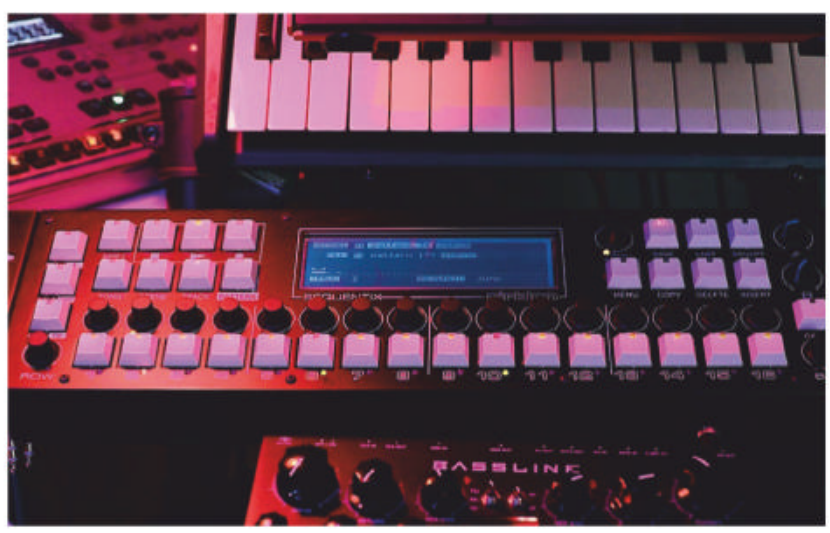
"Other times I'm stimulated by the endless options of Eurorack and I'm inspired to dive into long sessions exploring my rig. Both are different experiences but equally valuable in my path to creativity."

> "NOT ONLY DO THESE TOOLS BRING SONIC VALUE, BUT CREATIVE SATISFACTION"

PERFECT PERCUSSION

"I love analogue drum machines but I've found that using sample-based drums helps me shave time and get the results I want quickly. Drums generally have more of a structural purpose, over their need to be overly creative and malleable. Their frequency and rhythmic purpose within the mix is very important, and the





ability to fill that purpose is what I am looking for first and foremost.

"If I have too much range within my drums, I'll waste time and precious creative energy, which I need to save for later in the process. On a proper club system you need to make sure you have the right balance in the bottom and top of the frequency spectrum otherwise things can get messy. This means making sure to not only fill the range completely but also that the interaction between the sounds is healthy and not impairing one another.

"I try not to over-process sounds by selecting the ones that already have the correct frequencies for their purpose. This allows for cleaner mixes, faster results and the fullness that I am looking for. Of course, there is always a need for further adjustments and EQ and compression finds its way to where it needs to be."

MIXING DOWN

"I use my console for mixing live levels coming into the computer. Once tracked, I do most mixing in the DAW. I mainly use FabFilter and Waves plugins and definitely have some go-to plugins I consider to be 'unicorn' tools. The FabFilter Saturn is one that's used a lot in my music. It can be used as a saturator, filter and an EQ, and has the magical ability to bring bite to any sound that needs a push.

"Another really useful tool is Trackspacer by Waves Factory. It's a frequency-specific ducking plugin that can really help getting rid of conflicting frequencies. Though I depend on my plugins to help me get my mixes right, the most powerful tool I find is to choose the correct sounds from the start. This is always the best mixing choice that will make the backend mixing much easier."

WANT TO KNOW MORE?

For updates on David Castellani's latest exploits, visit **instagram.com/davidcastellanimusic**

Castellani talks lovingly of his Elektron Digitakt, his first and greatest gear paramour

WHY I LOVE MY...

Elektron Digitakt

VIDEO ON FILESILO

"[Digitakt] has so much packed in that little box. It's become one of the tools I really don't think I could live without. For drums, I find it very valuable. With analogue stuff, I find myself spending too much time tuning to get the drums to sound right. With this, I can just load in the samples that I want and then, boom – I'm running off to the races!

"On top of that you have a lot of control over the samples. You can really make everything come to life in so many different ways. That, plus the control you get with the conditional triggers and parameter locking, makes this thing a powerhouse.

"I like to use it both in the studio and live. In the studio I use it for the sequencer. Elektron sequencers are so magical and even if it didn't have the sampling side, it'd be a valuable piece of gear at the price it's at. When I want to use a synth that doesn't have its own sequencer built in, it's so easy to grab this, plug it into the back of it and get all sorts of great melodies and ideas.

"It's just really a beautiful piece of gear." FM

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Get 3D with Animoog Z

Rob Redman gives us a kickstart in taking sound design to another dimension, with Moog's latest virtual instrument

Moog's updated version of the popular wavetable synth may look very similar to the original but it has one big new trick up its sleeve and that is the addition of a third dimension. This effectively takes the old 2D grid and adds a second grid flipped 90 degrees, giving the Z depth. This means plotting a sonic path can be done up and down and side to side, as before, but now also near and far. This opens up whole new sonic territory to explore, with many more possibilities for creating patches. From the traditional and simple, through to some pretty wild, evolving ones, that can vary greatly over time. This of course means you'll need to adapt your thinking slightly to account for the additional depth, but that shouldn't take long.

On top of this is support for MPE, meaning you can take advantage of not just classic MIDI control we know and love, but many of the other devices you may have in your studio. Animoog is an obvious use case for this extended and often more natural control method. Its onboard keybaord is already capable of not just the standard strike and hold gestures, but also glide, pressure and aftertouch. Although this is all based in MIDI as we have known it for years, it's only relatively recently that musicians have started to properly explore it. With that in mind, we would highly recommend using an MPE controller for playing Animoog Z, although you can also use gestures using the touchscreen of the iPad version. However, Animoog really comes into its own when used in a host app, like Logic, teamed with a suitable controller. You can use a standard keyboard, but you will be limited to traditional playing gestures. Of course, there are ways around this using automation, but that detracts somewhat from the organic playability that MPE is supposed to offer.

So, over the next few pages we'll share a few tips to get you up and running with Animoog Z. Some aimed squarely at the app version for iPad, where the hardware becomes part of the interaction.

Learn to navigate Animoog Z with our essential workflow tips

Discover how to think outside the box, interacting and navigating in new ways, to get the most out of the device you're playing on

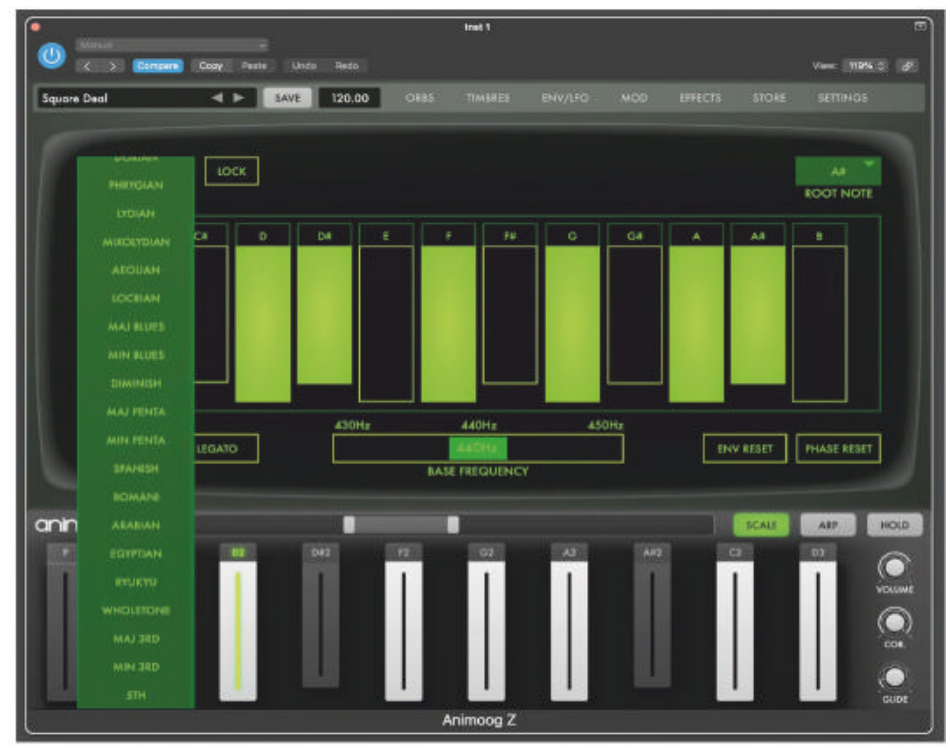
Back to the future

1 Users of the previous version can export old saved patches and import them into Animoog Z. You can even do this on an iPad as long as you are using the most recent iPadOS. You can load presets by clicking the folder icon, which will launch a finder/files window. From there you simply navigate to the location of your old presets on your drive and hit open.

On an iPad, you'll need to zip the presets first, using Files, then locate and open them. A note on this though – if you do this twice you will get duplicates, as it doesn't overwrite patches with the same name.

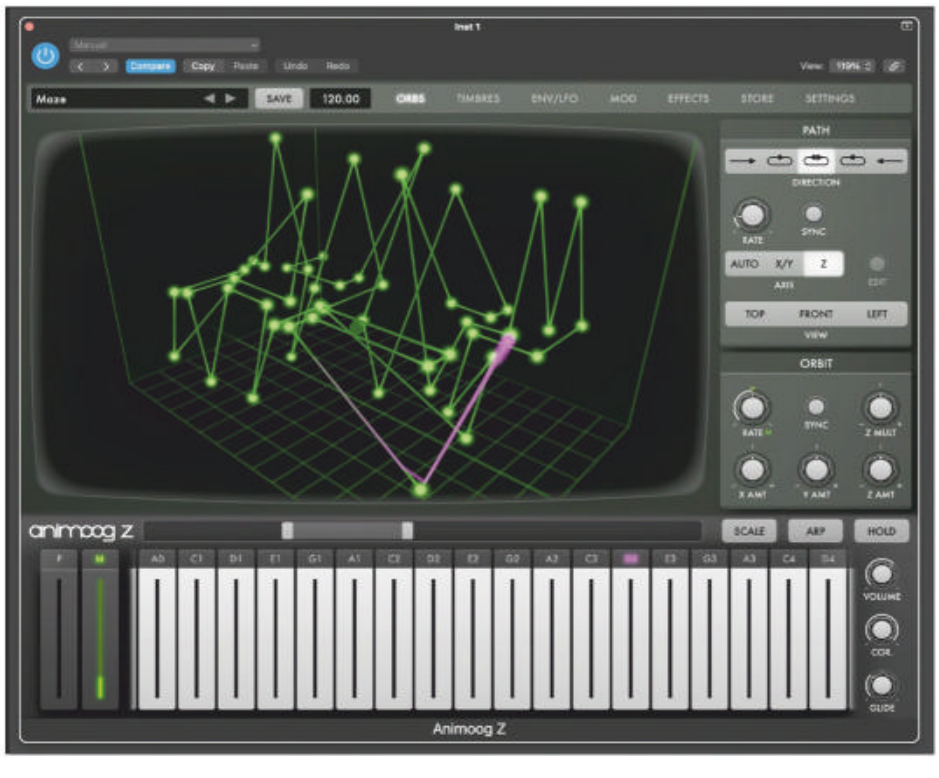
Sausage fingers

2 For those players on touchscreen devices, who may not have the most delicate phalanges, you can not only move the octave



Scale quantisation

3 Animoog Z allows you to play chromatically, but the design of the on-screen keyboard isn't standard. We'd suggest choosing your root note (top right of the panel) and then click the drop-down (top left) to choose from one of many scales preloaded into the instrument. This makes the keyboard make more sense and if you do skip a note by accident at least it will be in key. This is more important for playing on the screen but can work well for those using a keyboard or something like a launchpad. A note on which, if you use a grid-based controller and a host app, the scale shown on your controller will take its scale display from the host, and not from Animoog Z.



Go deep

4 Animoog Z, as the name suggests, allows you to work in 3D space. Alongside the top, front and side views you can also navigate in full 3D. To do this you can use two fingers in the viewer to rotate the view, to gain a better understanding of where your points and paths are in relationship to each other. Clicking Hold, playing a note, then navigating in 3D is the best way to visualise the path of your patch.

Animoog is displaying but also spread out the keys. Grabbing one end of the octave slider allows you to expand or contract the keys, giving some separation to aid in playing, offering a distinct advantage, especially on smaller devices. The inverse of this is true too of course. You can compress the notes together and use the slider just to scroll through the octaves displayed, which will suit those players with a larger screen. If you are using the desktop version, the entire interface can be scaled up, perfect for making the keyboard fit your hand size.

Lock an axis

5 When you are trying to plot a path in 3D space it can be easy to lose track of where you are in one or more directions. For a more precise input, try locking an axis, so the point you are adjusting is constrained to just one direction. For example, if you want to push a point back in space, on the orbs page, just hit the Z button, which will deactivate auto mode. Once you are happy with the location you can continue as before. It really is the best way to be accurate in your placements.

Extra depth

7 The LFO and envelope page allows you to easily dial in the most common settings but, as with some Moog hardware, if you tap the little triangle icon at the top right of a window, it will open up a more detailed, larger view, which presents you with some extra options. This is great for ultimate control but, if you are on a smaller device, also gives better accuracy using touch input. For envelopes, you gain access to things like Hold, as well as the interpolation types for each stage of the envelope.

Custom waves

6 When in the Timbres page, you can select a timbre, then the tiny plus icon, which you'll see at the bottom right, which will open the wave editing pane. From here you can record audio to use as the basis for a new timbre. Good results can be achieved even from the iPhone's built-in mic. It's easy to trim the audio by dragging in from either side, then click Insert, followed by Save and you have a custom wave to add to your three-dimensional sound design.

Novel inputs

8 The mod page offers ten slots of modulation, which is enough for almost any patch, but better still is the variety of the control inputs on offer. The usual suspects are there, like mod wheel and pitch bend but, a fantastic addition for iPad users, you can even choose things like the angle of your Apple Pencil, or each axis of the accelerometer. Being able to move your device around to control pitch bends is a little odd at first but soon becomes a nice extra way of interacting with your music that just can't be emulated on a desktop machine. When using these kinds of inputs don't go mad. It's worth trying to stay consistent but also logical. Think of your device as a games controller. Stick to concepts like Z being closer or further from you and Y being up and down. That way, if you ever collaborate on a project, your project, patches and so on will be easy to understand for everybody.

Creating a modulated synth pad on the iPad

Using a touch interface, let's set up a playable pad, with modulation to help shape the tone over time

01 >

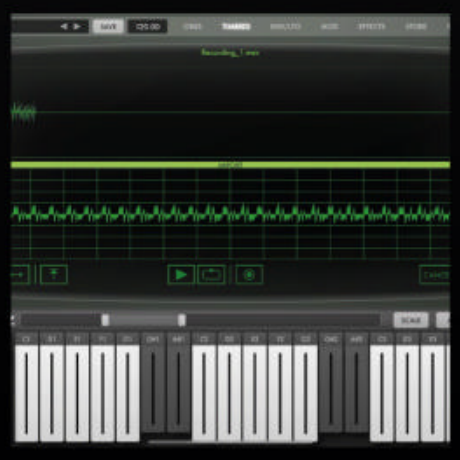
The first step is to start with a blank patch. It's worth going through every setting, double tapping to reset, on all pages including effects, then saving, so you have a good place to start every time. Once done, select it in your presets view and click the star to favourite it, making it easily accessible in future sessions.

02 >

We'll start with timbres, so move to that page. This is where you load in the base sounds. Filter via the tags on the right and choose wavetables to taste, loading them into the slots on the left with the left of the two arrow buttons. We chose four presets to start with.

03 >

Hit the + button to open up the edit page and choose Record. We made two recordings which we saved and inserted into our wavetable list, then added them to the four remaining slots on the grid. You can preview each slot with the play button next to it, or by pressing and holding in items on the right-hand list.



04 >

Head to the ENV/LFO page to set envelopes. See in the image how we have set the amp. To get this expanded view with extra controls click the small triangle at the top right of any panel. While you can use touch to set envelope points in the main view, this expanded view is handy as it lets you change the interpolation curves too.

05 >

In the effects tab, add a little detune, with the Thick pedal, some synced echo and, most importantly add a low-pass filter. Now head to the mod page to set controls for these. We like using the pressure to control the filter envelope but set to taste.

06

Now for the fun part. In the Orbs page, plot your path through the wavetables by clicking the viewer, or draw the path with a finger, then set a play direction. For pads, playing forward works, as it lets notes ring clear at the end of the path, and build with more notes. Add orbit variations and you're done. Now save your patch! **FM**

No tricks
No copies
No gimmicks
No emulations
Only quality...

AUDIENT

You can't unhear quality

© Camille Blake

MMM

The glowing techno chords of MMM's long-awaited debut album, *On The Edge*, are delivered with scapular precision. **Danny Turner** charts the record's creation

Having first met in 1994, Berlin-based duo Erik Wiegand and Michael Fiedler have collaborated intermittently on numerous singles and EPs, producing electro, funk and techno-influenced club music under the name MMM. Berghain resident and producer Fiedler (aka Fiedel) brings his DJ background to the fore, while Wiegand (aka Errorsmith) lends his experience as a software developer to provide creative solutions.

MMM's slaying electro track *Donna* (1997) was an immediate success, yet the duo would not reconvene for over a decade, and it was not until recently that they combined to create their debut album, *On The Edge*. Sophisticated and emotionally complex, the album's refined, meditative tension draws on two decades of techno culture and Wiegand's in-depth knowledge of Native Instruments' Reaktor and self-designed additive synthesis software, Razor.

Can you give us a bit of background on your careers prior to working together?

Erik Wiegand: "I was born into a musical family. My father played in a wedding band and had a small home studio, so I was able to use all of his drum computers and multi-track tape recorders. I moved to Berlin in 1991 where I started to take my first steps into production, mostly buying second-hand equipment."

Michael Fiedler: "We met in 1994 because a friend of ours had a radio show. At that point I was already experimenting with music production and had been DJing for a while too."

"WE'RE INTROVERTS, SO THE ONLY PROMOTION WE DID WAS TO BRING THE TRACK TO THE ATTENTION OF SOME BERLIN-BASED MUSIC PUBLICATIONS"

Your first release was a bit odd as it comprised techno tracks on the end of an indie rock album…

EW: "I was friends with the bass player of a band called Surrogat and they asked if we would be interested in remixing some tracks from their album, *Soul*. We thought it would be a good idea for our remixes to be on the album that the original tracks came from, so yes it was unusual but I liked that."

Your early EPs *Elektro Cut* and *Donna* were a bit more electro-based?

MF: "We always like music that has a groove. Erik and I came together because he liked what I was playing in my DJ sets. We were also keen to make electro music rather than the straight, four-on-the-floor techno stuff."

EW: "I would definitely make a distinction between the remixes on Surrogat and the MMM records, which were experimental but still thought of as DJ material that could be played out. *Elektro Cut* is an electro track and *Donna* is an acid techno/electro track. We always thought we should have a banging track on A1 and get a bit wilder with the others, but they were all designed for the dancefloor."

What gear were you using back then?

EW: "We were working from my home studio and using the Roland TR-606 and 808 drum computers. I was producing on the Atari and making whole songs on it like you would nowadays on a DAW but recorded to DAT. When I started working with Michael on MMM, we switched to a different approach where the drum machines were running and we'd jam by changing the sounds, hitting mute and pressing the break button on the 808. We recorded whole jams on DAT and then I'd put the recordings into the computer and cut the best bits together to make it more condensed."

The track *Donna* was a big seller, but you didn't seem interested in capitalising on that. In fact, you didn't work together for another decade?

MF: "We didn't realise *Donna* had been successful for quite a while. We had no distributor, so I'd just take vinyl copies of it to record stores, play it to the guys there and maybe sell three or four copies. It became successful bit by bit, but Erik was starting to work with Native Instruments at this point and we had different directions of interest. When he started his Errorsmith project, he began experimenting with analogue and digital sounds and we felt we could work together again."

EW: "We're introverts, so the only promotion we did was to bring the track to the attention of some Berlin-based music publications. Although *Donna* sold a lot, our telephone wasn't ringing with lots of promoters wanting to book us, and by the time we started making music again everything had changed and people were not buying vinyl anymore."

We keep hearing that vinyl sales are growing exponentially. Do you see evidence of that?

MF: "No, not at all. As a DJ, I still buy vinyl and like to play it, but sales are more common in represses for the big pop artists or rock bands, and that scene is for collectors not DJs. Most of the records I buy or make with my label are for DJs to play out, but not too many of them buy records anymore, which is a little bit sad. It's very convenient to carry a USB stick, but I still like the feeling of vinyl so I'll do it where I can, but it's difficult to find venues these days that provide a DJ setup without broken needles and tone arms."

After 25 years of releasing singles and EPs, why was now the right time to record your debut album, *On The Edge*?

EW: "It came to us very naturally because we were working on new tracks that had a similar vibe to them due to the fact that we were using mellow chord sounds as a basis. These were not banging tracks that would suggest themselves for a single or EP and we wanted to explore that style further. In the end we thought we had enough ideas and material for an LP and were interested to see what people would think."

MF: "We called it *On The Edge* because the album is a bit melancholy and meditative but there's also a lot of tension. We want the music to feel like you're exploring and expecting something to happen but it doesn't happen, as if the mood is suspended and about to push you over into something."

Erik, you're more than a musician but also a software developer. When did your interest in this field emerge?

EW: "At the beginning of the '90s I started opening up analogue synths and modifying them. I read everything I could find about synthesis, studied computer science and got increasingly into this topic. I started to use Native Instruments' Reaktor very early in 1998 and thought it was mind-blowing because it was similar to programming but in a graphical way, which enabled me to focus more on the

synthesis aspect rather than coding with text. From then, I started to develop my own Reaktor instruments for Errorsmith and our productions with MMM."

Were you working for Native Instruments at this point?

EW: "I started working for Native Instruments as a head of beta testing when it was a small company. In 2004, I started contributing to the Reaktor library and organising contributions from external Reaktor developers. At the time, it was possible for NI to sell Reaktor instruments as a separate product without people needing to own the software, so I had an idea for an additive synthesiser and convinced them to make it. That synth was called Razor and came out in 2011. Besides music-making, I still spend a lot of time developing Reaktor content for my own music and Native Instruments."

Do you have any examples of Reaktor instruments you have made to help with your creative workflow?

EW: "At one point, no synth on the market was exploring the idea of recreating traditional features like filters, oscillator shapes and effects in an additive way using lots of sine wave oscillators to emulate them. I tried it out on Reaktor and it sounded really good. Another idea I had was that people often reverse sound recordings and I thought I could patch something in Reaktor so that when I pressed a button it would reverse what was just played. If you listen to my first Errorsmith record in 1999, you will hear these reversed parts, which were all made by jamming on-the-fly."

Michael, do you also have an interest in software design?

MF: "Not as much as Eric, he is the driving force of the project when it comes to sound-shaping. On the album we used a lot of his creations and whenever we face problems he typically finds a solution in Reaktor to solve it. I like to get my ideas out quite fast and I'll dig into all of the plugins, but I'm not into deep-learning how a synthesiser works. I love Razor – it's a really nice tool, but I'm more of a user than a creator."

Is it true that you're both anti-sample, in that you prefer sounds to evolve rather than remain static?

EW: "As Errorsmith, I put restrictions on my music and only use synths that I've built myself, but with MMM we use whatever fits. If we find a sample that suits the track, we'll use it, but I prefer to keep synthesiser elements the way they are rather than freezing the sequence because I feel they sound better that way and you can always go back to the knob settings if you want to adapt something. We also enjoy presenting the material live, so it makes sense to keep to the original synth sound. With *On The Edge*, we used two external hardware synths and made static recordings, but when it came to the live set I recreated those sounds using Reaktor just so I could change tempos and avoid some of the warping issues that you sometimes get with samples."

In practical terms, how did you work together on this collection on tracks?

MF: "We always work in person and as I was not travelling around much due to the pandemic we were able to spend more time together. In the past, Erik would prepare stuff and invite me to think about it and jam with him. If he has a technical solution for an effect, he will develop that in Reaktor and then we'll decide whether it's worth adopting."

EW: "For us, it doesn't make sense to send a project back and forth and it's important to have that social interaction. We're

Live at Unsound Festival, Krakow © Jovan Mrowinski

Live at Unsound Festival, Krakow © Jovan Mrowinski

> "WE ALWAYS WORK IN PERSON AND AS I WAS NOT TRAVELLING AROUND MUCH DUE TO THE PANDEMIC WE WERE ABLE TO SPEND MORE TIME TOGETHER"

very close friends and during the pandemic Michael was almost the only social contact I had."

What tools did you jam with to kickstart your ideas?

EW: "I always have a collection of demo sounds from Reaktor patches that I've created, so we started with a basic mellow chord sound that would be interesting enough to define a mood and play a role throughout the entire track. It's rare that we know what our end goal is; we just go step by step, adding more and more before we start to refine and refine. It's a very organic process and at some point we usually have the feeling that we're not in charge anymore – as if the track has a life of its own and is suggesting what it wants. When I work alone, it seems more difficult to do that, but with Michael it seems easier to pinpoint the direction we should go in."

Are all your ideas sourced from Reaktor software?

EW: "I bought a Teenage Engineering PO-20 Arcade Pocket Operator, which is really nice because every chord is based on an 8-bit arpeggiator. The track *Everything Falls Into Place* was made almost entirely on the PO-20, but we'll quite often use Ableton's Operator to give us a saw tooth sound and Ableton's Auto Filter, which has these analogue-modelled distortion/ filter types. We find that those are very nice for distorting chords because they sound very rough and add interesting non-harmonic overtones. The only exception to the rule was the track *Farsta Dream*, which evolved from a beat first and then we wanted to incorporate a chord, so I made a Razor patch that allows you to create pitched noises. If you listen to the track, the snare sounds like a snare and has a noisy tale to it, but it's actually a snare rattle made out of a chord."

Your sound is very reductive, so much so that some tracks only contain four elements…

MF: "Previously, our tracks were based on DJ material so we didn't pay so much attention to those spacious elements, but in the process of making these tracks we decided to eliminate sounds to give everything space to breathe. When you have a busy track, you cannot always hear objects and start to realise that certain sounds are not needed. By refining the music, the sound becomes more spacious and the chords have room to come alive."

EW: "It was deliberate to leave the music sounding sparse and restrained. That was very new for us and we found it interesting, particularly as it seems like everything is screaming at you these days. We spent a lot of time finding the right reverbs, which fill the space of course, but it's not wishy washy. On *Farsta Dream*, we put a feedback delay onto a reverb that swells up and down, giving tension to the track. We also put a Barber pole Phaser from the Reaktor user library on the reverb tail so you have the feeling that the notches and peaks of the phaser are going up all the time. It's an illusion but it fits the meditative feel of the track very well."

Your beats are equally sparse – the tracks often sound like they're hanging from a thread. Is that part of the tension you want to transmit?

EW: "The beats are reduced to the core. I wouldn't say the patterns are experimental, they're quite basic and nothing you haven't heard before, but what's strong about the album is the atmosphere it conveys rather than how intricate the rhythms are, especially compared to other footwork artists."

MF: "As a DJ, when I buy music it has to be groovy, even if it's techno or sparse-sounding. The track *On The Edge* has a straight bass drum with one variation and the timing of the clap is quite dubstep, but when all the elements come together you have a groove that you can almost float on. If the beats were too linear, it wouldn't sound like MMM."

EW: "We premiered the album at the Unsound Festival in Krakow, which was very nice. We played the uplifting stuff that we're best known for at a house tempo and that contrasted well with the new tracks where everything slows down and gives a certain weightless effect. After the show, people told us that this was a really cool feeling for them." FM

WANT TO KNOW MORE?

MMM's self-released debut album *On The Edge* is out now. For more information, visit **mmmberlin.bandcamp.com/album/on-the-edge**

Drill

From roots in South Side Chicago, this twist on trap has spawned regional variations around the world

It's not uncommon to discover genres which thrive and evolve in different locations and contexts. Drill is a perfect example, a genre which emerged in Chicago but quickly evolved around the world, mutating and giving birth to regional variations in a totally organic way, feeding back into itself as it went.

The drill sound and name originated in Chicago around the early 2010s. South Side rappers led by Pacman began to refer to their output as 'drill music', a slang term referring to retaliating, getting hyped, fighting or shooting depending on who you ask. In simple terms, drill could be seen as little more than an offshoot of trap, a hip-hop subgenre we've explored before in this column. Stylistically, the two sounds are clearly linked: typically in the 130-140bpm range with a woozy halftime feel, drill beats adopt much of the 808 instrumentation of the typical trap sound, but mix things up with more wonky snare and clap patterns, sparser hi-hats and often a distinctive sliding 808 bassline.

Lyrically, drill is defined by a cold-hearted nihilism which frequently eclipses even the most bleak moments of gangsta rap or trap. Drill is murder music, gang music on a serious level, echoing the backgrounds of rappers like Chief Keef, King Louie and Lil Durk. Questioned in a 2014 interview on whether drill encouraged violence, pioneering drill producer Young Chop argued that the music simply reflected the gritty reality of Chicago gang life: "I don't even know what drill music is, but whatever they think it is we just telling the truth. Everything that's in the raps is the truth of what's going on in the streets of Chicago right now."

The Chicago drill sound quickly spread further afield, notably to London, where it was given a local twist with the introduction of grime and UK garage production influences such as warping basslines, plus different vocal styles, with less reliance on autotuned vocals, and flows inspired by road rap. Unsurprisingly, London drill has not been without its own controversies, most notably in relation to lyrics which reflect gang feuds and knife crime. London Metropolitan Police Commissioner Cressida Dick blamed drill videos for encouraging violence, lobbying YouTube to remove dozens of videos from the site. In an unprecedented move, London group 1011 were also formally banned from making music without seeking permission from police.

Nonetheless, the UK take on drill crossed over to significant chart success, beginning with Unknown T's *Homerton B* in August 2018. The UK sound also fed directly back to the US – notably via Brooklyn rappers such as Pop Smoke and 22Gz linking up with a number of UK producers – and to Canada, via Drake's 2019 track *War*, produced by London drill producer Axl.

Further afield, drill has spread all around the world, mutating and creating its own new forms in countries including Australia, Spain, the Netherlands and Ireland.

Much like trap, drill has become a staple element of modern hip-hop culture and even, somewhat more surprisingly, mainstream pop music. Russ Millions and Tion Wayne's *Body* was not only the first drill track to reach the UK number one, it was also surely the first chart topper in which one of the artists brags about the evidence used to convict them for affray: "When I punch man, it's grievous/They played back the CCTV/ When I punched him, man, the feds said 'Jesus'" (in 2017, Tion Wayne was sentenced to 16 months in jail for his part in a mass brawl outside a nightclub in Bristol).

Lyrically controversial and musically uncompromising, drill's uniquely compelling style has made it a fixture of hip-hop far beyond its South Side Chicago roots.

© Johnny Nunez/WireImage

Three regional drill classics

CHICAGO

Chief Keef – *I Don't Like* (2012)

1 Produced by regular collaborator Young Chop, Chief Keef's debut single marked one of the key moments when drill crossed over into mainstream hip-hop consciousness, helping to define the sound as a distinct spin-off of trap. Aged just 17 when the track was released, Keef's lyrics are literally a street-level list of "shit I don't like", from snitches to "sneak dissers". The follow-up, *Love Sosa*, cemented Keef's status as one of the hottest rappers of the last decade.

LONDON

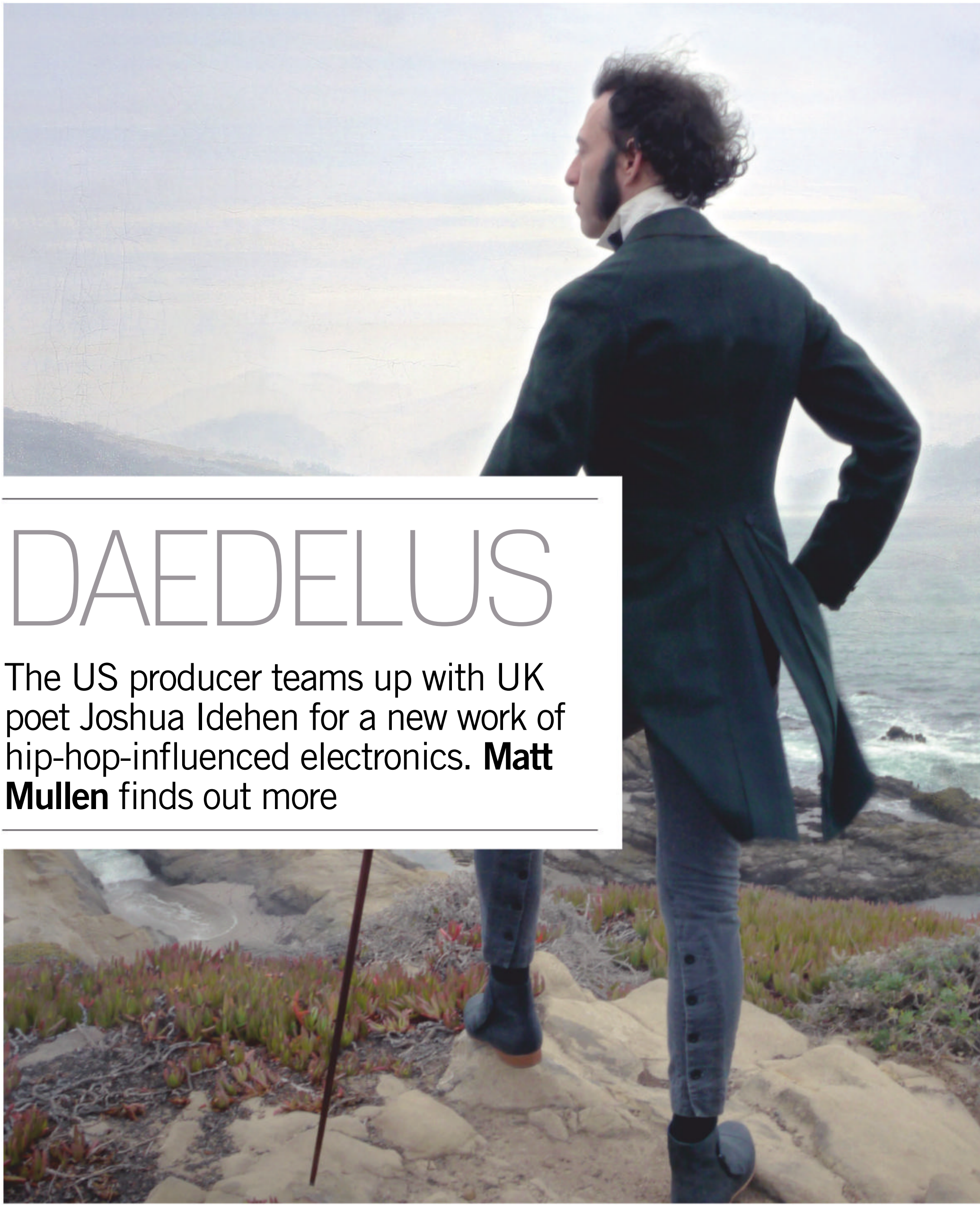
67 feat Giggs – *Let's Lurk* (2016)

2 Credited as one of the first acts to bring Chicago's drill aesthetic to the UK, London's 67 teamed up with Giggs on this definitive track, showcasing the group's sinister, claustrophobic sound. The track's instrumental, produced by GottiOnEm and Mazza, was originally used by 86 on the track *Lurk* but found crossover success as the backing for *Man's Not Hot* by novelty rap character Big Shaq, aka Michael Dapaah.

BROOKLY, NYC

Pop Smoke – *Welcome To The Party* (2019)

3 Another debut single from a teenager, 19-year-old Pop Smoke's choice of production for *Welcome To The Party* epitomises the cross-pollination of US and UK drill. Finding a beat by London producer 808 Melo via YouTube, the Brooklyn rapper reimported the London sound to the States. Further collaborations with London producers continued at a pace until the rapper's untimely death in a home invasion, aged just 20. FM



DAEDELUS

The US producer teams up with UK poet Joshua Idehen for a new work of hip-hop-influenced electronics. **Matt Mullen** finds out more

Three facts about Daedelus that neatly capture the expanse of their ambition: they were sampled by Madlib on the classic MF Doom track *Accordion*, they're part of the founding faculty of the prestigious Berklee College of Music's electronic music performance program, and they're an artist-in-residence at the SETI Institute, a scientific centre seeking extraterrestrial intelligence.

These three data points illustrate the scope of Alfred Darlington's talents: as a beatmaker, producer, performer, professor, and innovator, they simultaneously inhabit the worlds of cutting-edge music technology and improvised, off-the-cuff beatmaking, demonstrating that in an increasingly borderless music world, there's not all that much difference between the two.

Daedelus laid down the building blocks of their sound as part of the LA beat scene, a loose collection of artists and producers working throughout the late '00s and early '10s to connect the dots between forward-facing electronica and underground hip-hop, redefining both of these labels in the process. Since then, their extensive discography has expanded to encompass abstract sonic collages, jagged beat science, and hallucinogenic synth explorations.

Daedelus' vividly realised music has long acted as a frame for ingenious lyricism, and their latest project is no exception. Made in collaboration with poet, spoken word artist and musician Joshua Idehen, known for his work alongside UK jazz luminaries Sons of Kemet, *Holy Water Over Sons* is centred around poetic meditations on identity that bleed into the edges of Daedelus' restlessly shifting soundworlds, dissolving the boundaries between music and meaning.

Tell us about how this collaboration with Joshua Idehen came to fruition.

"He had come to some shows in the past – it's funny how the music world works. It's a very small scene in some ways. Fans become collaborators, peers become closer friends, this whole thing can happen. And indeed, he'd come to some older shows and had followed me and my work. But I was woefully unaware of what he was propagating for a period of time. He had started to post some music and was really compelling and other friends had pointed out his unique take on the poetic voice.

"I know a lot of MCs. I know a lot of people who can kind of be nice with words, but it's different when somebody is both like, funny and verbose, but also pointed and meaningful. And he'd struck a really nice balance, even with this kind of more dancey, bouncy stuff. That's initially how I came across him. So I think I'd followed him based on those kinds of projects. Then suddenly, here he is in my DMs effusing about older stuff that came out years ago and it's like, how does he know?

"Anyway, so there he was. And we just began to talk and say, hey, let's figure something out. I thought it was going to be something in the dance variety, because that's what I was more aware of. Then he started to express an interest in the softer sounds. I had some of these files that have been ruminating in my not-finished section that became totally transformed by his voice. It was really just seeds that sprouted with him involved, and then that became the project."

Were you writing to his words, or was he writing to instrumentals by you?

"Beatmakers might relate to this. I had a bunch of loops, a bunch of eight-bar, 16-bar, 32-bar loops that weren't even with rhythms necessarily. It was so pre in the process, they were just these kind of pretty licks that I was like, this should go somewhere. And it just sat fallow in the field. And thankfully, he heard the possibility in it.

"He started to write in this way, so – this is another beatmaker kind of thing – I looped it up for him to write to, but mostly in a way that he could just have it repeating, so he could write his 32 bars, you know, kick his verse or something, but he ended up writing for the entirety of the minutes.

"So I would loop something up for like, five minutes, and he would give me a five-minute long recording. Which is incredible, and again, verbose, and miraculous in some ways. But I had to then go and trim it back, and then start to really amend and add, because I didn't want his voice to sit unadorned, I really wanted to contribute more than just to be the beatmaker in the background. And he also was encouraging me to go kind of crazy.

"So we did a lot where the voice on each song focuses on a different vocal treatment. And this might not be super obvious, but like, a different kind of formant filtering, or a different kind of vocoding. There's a lot of different techniques involved from a synthesis perspective, that could get very nerdy, but also hopefully make it so that it doesn't feel like he's alone. As much as he is mostly the solo voice. I'm hoping that I'm kind of responding in a way that really makes us feel collaborative, rather than just a producer and an MC."

We love how the vocal processing sounds on tracks like *If We Must Take It* – how did you achieve that effect?

"This one's an interesting one. This one's using specifically formant-shifting, based in a technique of circular LFOs. There is an amazing maker named Suzuki Kentaro, who has these third-party Max for Live plugins, and specifically his take on LFO is incredible. Some of what he's operating in is this idea of like, interlocking, but related, different floating LFO points. So it's as if you had six different consecutive Venn diagrams that would all kind of relate to each other.

"I'm doing that kind of technique to have different elements of the modulation relating to the music, but then also to the voice. So sending it around, sending around that information. And to get happy accidents that really feel like breathing, or get this humanised nature, but then focusing in on the most successful versions of that, because they are a little bit wild, they are a little bit moving and reacting to other audio input.

"And then finding those happy accidents, and then committing those down to the track. So it is just formant shifting, but with this way of really breathing into it. Equally it ends up sounding like pitch distortion or modulation, but it's not really, it's just kind of taking the voice up and down its natural vowel sounds, and distending it.

"I find oftentimes in electronic music we can be a little bit ignorant towards the very natural sounds that we can achieve in nature. Nature abhors a sine wave, right? Every actual waveform in the world is this complicated mess of inputs and side-long noises and all this other stuff. I love the perfection of a couple sine waves put together – it's obviously a hallmark of electronic music of how unreal and yet very real and visceral it can be – but I really wanted to achieve on this record something more naturalistic, even if entirely in the box."

Talk us through a few key elements in your studio...

"I have this war that's going on in my studio currently. Part of that is because I have gone from a very comfortable setup that was carefully honed over a number of years of just kind of building and building this place where I could easily achieve the results that I could imagine, to subsequently moving to

Providence, Rhode Island, where my studio is in pieces, and it's totally piecemeal.

"Now I need to really work hard to make my memory space go to that kind of easy imagination. But then, the accident of it, the wonderful part of that is that I'm now responding much more to the equipment, what it wants to do. The limitations of like, well, 'I can't find the cable that connects it to that pedal that I know is so lush, and reverberant, or distorted and so I guess I'll just have to work with what I have in front of me'.

"A few years ago, I really got into modular and so I'm kind of in that scene, using mostly modular in the live context. But in this particular record, it did actually show up a little bit in terms of both modulators coming from external sources that are then fed into the computer, or indeed, taking the computer out. Taking the sequences out from the computer, and then going to the modular.

"I really adore, from a company called 4MS, a wavetable synthesiser that they put out called the SWN, the Spherical Wavetable Navigator. That's been my bread and butter for a few different releases recently. But that being said, there's something also about just leaving it in the box.

"I didn't use any reamping techniques on this particular record. But I do adore that kind of thing, taking it outside your computer, mangling it, putting it through speakers, re-recording it and kind of flattening it that way. In this regard, it's just more Ableton to the max."

So this was quite a software-based record?

"Yeah, with a few exceptions of externalising sequences through modular synthesis. But other than the few instances of that, it's almost entirely in the box – partially out of necessity of moving to and from the Berklee College of Music campus, which is over in Boston, so it's only a 50-mile commute. But I do that almost daily to go and teach classes there, and then in my free time I would be on the train just trying to get a bop happening – basically the saddest bop ever. *[laughs]*"

"I'D GO TEACH CLASSES, THEN IN MY FREE TIME I WOULD BE ON THE TRAIN JUST TRYING TO GET A BOP HAPPENING – BASICALLY THE SADDEST BOP EVER"

© David Bodnar

What plugins are you using most?

"In the Ableton context, I often find this particular set of modulators to be really important. So LFO Cluster by Kentaro Suzuki is my number one on this record, I use it in almost every track, and try to use it in both typical and unusual ways. LFO everything, that's kind of the motto of the record.

"Everything should really either be tremulous, or have vibrato. Some of that is indeed using the direct plugin, the new kind of chorus or phaser plugins that Ableton 11 provided. I'm trying to make everything move and breathe. Some of that is just having the LFO operating and cycling. And some of that is triggering it at the tops of phrases to return to an unexpected state and then have it kind of tumble out elsewhere. Even having it self-modulating, which is a nice function of these LFOs, you can actually take the mappable function and redirect it towards itself for really amazing reverses and fast forwards.

"In addition to that, there's Drum Buss, which I think was instituted in Ableton 10 and is the most useful plugin that Ableton makes as far as I'm concerned, because it is such an aural sweetener. It is such a presence maker. You just put it on and it already has some sort of perspective. There's so much in Ableton that wants to be invisible or unseen, so you really start to push it to its extremities. Drum Buss is both like a comfort to me – it's like a very nice blanket to be extended – or you can make it hellacious just by making a few instances of it and turning up the transients. It's a really nice thing to do.

"Another plugin that is really, really clever is Echo. Echo is their new take on their delay. It's a typical delay-style plugin, but it's able to do ping pong or mid side. I would recommend adding just a gentle amount of mid side to everything you do, as it does make the difference. With the Echo too, there's a wobble function, under Characteristics. Even 10% of wobble tricks the ear into thinking this is something more human."

What was it that led you towards Ableton?

"I had been a longtime Pro Tools user for years. I had been using it for a lot of my electronic productions, and I loved how it treated audio, but it was obviously always deficient in almost every other regard. Then I did Ableton's Loop conference, some years ago, but I had always been using Max/MSP for my live set, so there was this difference between my production and my live set, being in totally different worlds.

"When Ableton gobbled up Max and made Max for Live, it opened a portal: I thought, maybe Ableton is both being progressive and moving it forward. But they're also enabling and allowing third-party users to kind of create their universes, in a way that Max or Pure Data had always been doing. And indeed, there was quickly a port that was made of the traditional MLR software that I use for my live set, developed by Brian Crabtree and from the Monome company.

"As Ableton became this way I can run my traditional live set, but it ends up being a vigorous kind of sample playback, distortion device. So I really started taking it seriously then in terms of production. I was doing Ableton Loop and I was like, I really want to integrate this. And of course, now I teach it, and I feel like I've gone all the way deep on it.

"It is such a universe, it is such an incredible space. And I know there are some really clever things going

on with Bitwig and some other companies that are making equally and easily entire whole spaces to become enamoured with, but Ableton 11 especially really reaffirmed my belief that this was the space I want to be spending my time."

What studio technology would you like to see developed in the coming years, and why?

"I have a whole list that I often talk about to producers and makers. I love the modular scene, in part because you can just talk to the people, the engineers who are building things and be like, 'hey, what about this?'.

"But in terms of the wider space, I teach performance in electronic music, and it's interesting how the pendulum has swung away from live performance towards this idea that everybody's on the CDJ, that's the modality. Or you know, even now there's more virtual systems, but very few people are really playing live. And if they do, they do similar kind of shapes that we see with Porter Robinson or FKAAJ where it's like, they're using keyboard-shaped things, even if they're doing more sophisticated things behind the scenes.

"So I want to see more gesture-based systems like what Imogen Heap has developed with the MI.MU gloves that Chagall uses. What we see with Binkbeats too, they're making other kinds of control sensor systems. But oftentimes, they rely on a certain willingness to dance on stage, rather than it being like, these meaningful small gestures that you can do within a system that's already constructed. So that's frustrating, but also a huge opportunity. And it's a language that hasn't developed.

"Someone clever is going to come along and develop a language of gesture that can be universalised, just like we saw with the turntable, and just like we saw with other non-traditional systems. When we saw these excellent pad users coming along and doing finger drumming at a really high level. It creates an expectation space that other people can fill and indeed, take further. I'm not gonna be the one to push this rock forward. I can just imagine these things, but I know the students I'm teaching, they indeed will be the ones to do something."

Does your teaching inform your music-making?

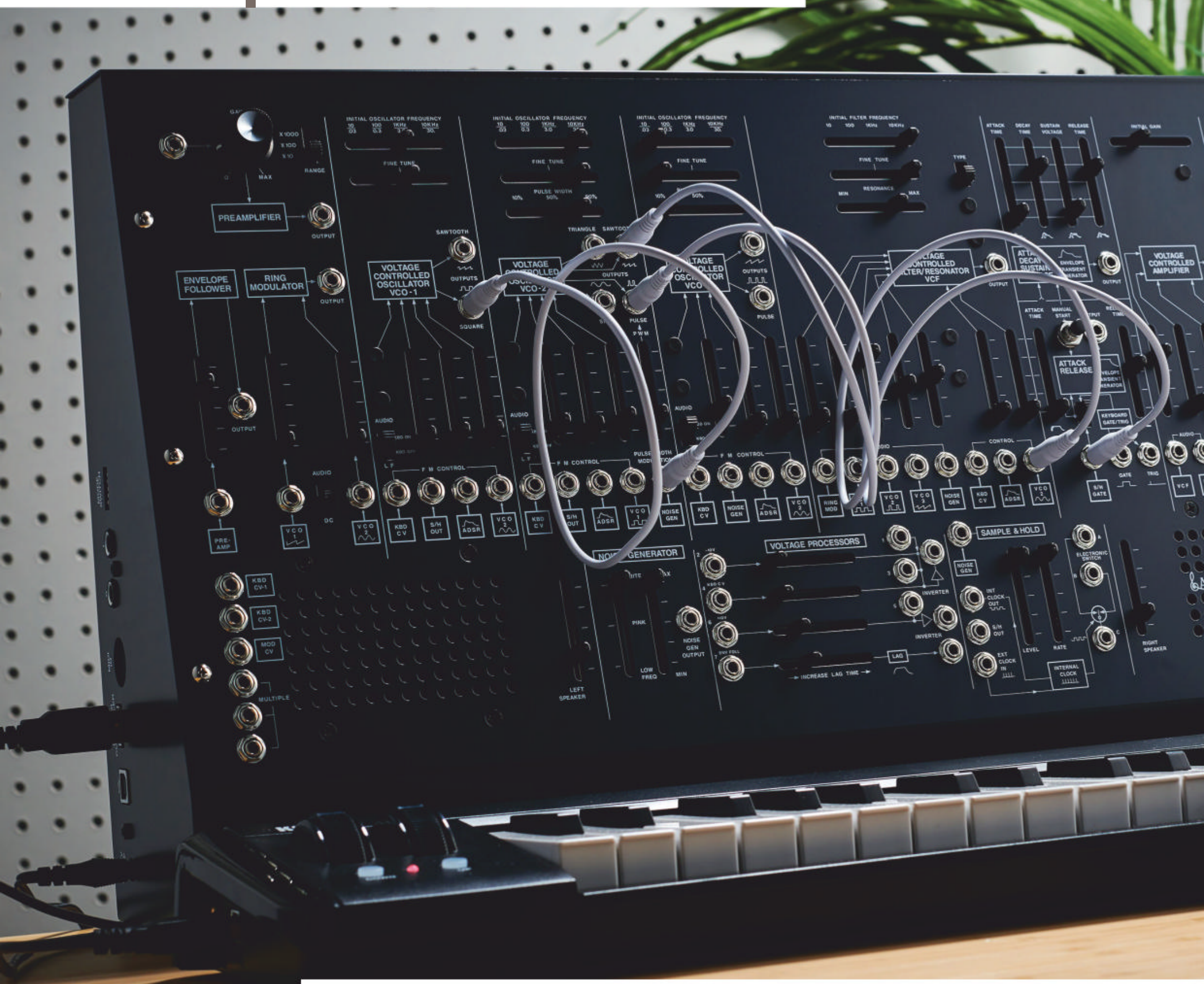
"1,000%. Both because I'm forced to listen to things that I would normally not choose to – I mentioned Porter Robinson before, I like Porter Robinson. But half of my incoming class, they're all Porter-heads. I think it shows you that this is the music of their very formative 14-year-old childhood. They're only 18 now, but still, that 14-year-old self has a lot to say.

"Porter is a very important musician in the electronic music scene, partially because they're doing something more than just the EDM shuffle. So it's meaningful. It forces me to think, well, what is yet to be expressed? Where's the music moving? Equally, all of my darker, rougher, louder, meaner, breakcore things, or whatever else is running in my veins, there's so much there too.

"But it's often not happening in the electronic realm. You see what's happening in rap. People like JPEGMAFIA, they're children of these harsh, noisy things. Death Grips too. These are all people who benefitted so much from the experimentation happening in the electronic scene and took it to places never foreseen by some musicians. We're all beneficiaries of that." FM

WANT TO KNOW MORE?

Daedelus and Joshua Idehen's *Holy Water Over Sons* is out now on Albert's Favourites



Korg ARP 2600 M £1,699

Korg are back with a smaller take on the ARP 2600. **Bruce Aisher** checks whether any magic has been lost in the process

CONTACT **WHO:** Korg **WEB:** korg.com **KEY FEATURES** 3 x VCO, low-pass VCF (two types – early and late 24 dB/oct), VCA, 2 x Envelopes (AR and ADSR), Noise Generator (white and pink), Ring Modulator, Sample & Hold **I/O:** External Audio Input, MIDI IN, USB port x 2 – Type A and Type B **DIMENSIONS:** 520 × 129 × 311mm **WEIGHT:** 6kg

THE PROS & CONS

+

It looks like a (small) 2600 – and sounds like a 2600

Extremely flexible sound design tool

Integrates well with modular gear

–

No dedicated LFO

Limited envelope options

Small sliders on the dark case can be tricky to see

Just where do you start a review of a legendary synth on which everyone has an opinion? Perhaps not by trawling the internet to find out what defines the 2600 sound, or why a particular make of clone is/isn't true to the original. In fact there are likely more views on this matter than there are original working ARP 2600s in existence. Let's also remember that the ARP 2600 itself went through a host of design changes (not always representing improvements) and it's impossible to travel back in time to hear what one of them sounded like when new. Such is the world that Korg stepped into when they released their limited-edition Korg ARP 2600 FS in 2020. This was a beautifully presented clone of the 2600 (with switchable filter types reflecting one of the main sonic differences between early and mid-'70s units) and came in an authentic case alongside a matching controller keyboard. The downside – a nearly £3,500 outlay and very limited availability.

Korg have now responded with a smaller keyboard-less version in the form of the 2600 M. Like its sibling it employs surface-mount components, adds MIDI connectivity and some small functional tweaks. However, despite losing the sturdy wooden case and matching keyboard of the FS, in broader sonic terms it is the same beast. Possibly to counter the competition from elsewhere, Korg are also keen to suggest that the 2600 M is not mass-produced, but more of a quality boutique investment with limited monthly production numbers. How this is perceived will perhaps determine its long-term success.

So what exactly is a 2600 and what has allowed its design to hold its place among the true classics? At its core it's an all-analogue three-oscillator synth. Each independently tuneable oscillator (alongside a noise source and the ring-modulated outputs of VCO 1 and 2) are sent to a low-pass filter section (VCF) and then amp (VCA) stage. Two envelopes (a 4-stage ADSR and 2-stage AR) can then be used to modulate parameters relating to oscillator frequency, filter-cutoff and VCA level. There are also some controls and sections for modulating one oscillator from another, for noise shaping, sample & hold, clocking, signal inversion and switching as well as lag generators, an audio input with envelope follower and spring reverb to boot.

Despite some of the hard-wired modulation options, one could argue that this is in some ways little more than a standard Minimoog-style monosynth, and also one that is somewhat deficient when it comes to the number of envelopes, LFO sources and filter shapes. However, if all you want is a playable pre-configured synth then the ARP Odyssey could well be a better fit, and a very fine one at that – after all, they do share a number of the same sonic building-blocks. Where the 2600 really comes into its own is in the sheer range of its pre-configured or switchable modulation and control routings, all married to a host of patchpoints for overriding or adding to them. In other words, it can do conventional, but also weird, nasty, complex and a whole host of other adjectives often more associated with modular synthesis. So while it will allow you to create great basses, leads and percussion sounds, it is also an experimenter's synth, where chance slider movements or random patching can deliver interesting results. However, for those used to easily switchable oscillator wave-shapes, exact tuning increments and patch memories, some disappointment awaits.

Compared to the original ARP 2600, the new Korg version sports USB sockets for connecting both a computer and a MIDI controller (though the MIDI spec is very basic). The review unit – being one of the

THE ALTERNATIVES

Antonus 2600
£2,999

Based on the TTSH DIY version of the 2600, this hand-built synth claims to be the next best thing to an original '70s grey-face.

antonus-synths.com

Moog Matriarch
£1,999

The Moog Matriarch expands their smaller semi-modular Mother synth with more oscillators, filter, envelopes and connectivity.

moogmusic.com

Arturia MatrixBrute
£1,599

Arturia eschew patch cables for a visual modulation matrix and full patch recall – though you'll still find plenty of sockets on its rear.

arturia.com

first 1,000 made – came with a KORG microKEY2-37 keyboard (stored in the impressive custom silver wheelie case with orange trim). This sat neatly in front of the 2600 M, but sadly lacks the arpeggiation, sequencing and LFO capabilities of the FS version's 3620 keyboard. Of more concern was the raised noise floor and noticeable digital mush heard when the microKEY was plugged in. Even without this connected the overall background noise was more noticeable than on the Antonus 2600 clone.

Two filter versions are included here, though the difference between them is subtle. Of more noticeable effect is the unit's size. Although its shrunken status does make it easier to place in the studio, and also for smaller patch cables, this does mean that the shorter sliders make fine adjustment harder. It also has to be said that the black-on-dark-grey colour scheme makes finding their current position tricky unless they're well lit – some 2600 clones (like the Antonus and Behringer) employ illuminated sliders. However, if you are willing to forgo the authentic decor then more colourful replacement fader caps might be in order. The relatively ardent line on authenticity might also have been broken by providing one or two dedicated LFOs (rather than having to rope in one of the oscillators for the task) – and maybe some additional multiples and VCA stages would have been nice. Perhaps the built-in loudspeakers could have been removed to make room for some of these?

I compared the Korg ARP 2600 M to a range of hardware and software equivalents. Next to the Antonus it sounded a little more refined, but this seemed to largely be down to the latter's ability to drive its amp and mixer stages into distortion more easily (which also altered the way the envelopes responded in some situations). One oddity was the Korg's VCO-1 square wave, which

> ...a synth that can rustle up conventional analogue tones but also provide the flexibility for further exploration

ARP INSTRUMENTS AND THE 2600

ARP Instruments, named after Alan R Pearlman, first gained attention in the early 1970s with the ARP 2500 – a large modular synth system. Like most modulars of the time, sales were limited. However, some of the modules were combined in a smaller pre-configured package to form the basis of the ARP 2600. With its clear front-panel graphics and ability to re-patch its standard signal routings, this synth was intended as much for education as making music. Functions and patching were streamlined further in the shape of the successful ARP Odyssey. Nailing the sound of a 'real' 2600 has always been tricky, mainly as there were many versions employing a range of boards and with changes in components (not always for the best). One significant change was to the filter, which was redesigned in 1976 after ARP spent many years battling copyright issues with Moog, and which had a slightly reduced bandwidth. In the end, the most revered versions are the 'Blue and Gray Meanie', and these were only manufactured in quite small numbers. Needless to say they're also the oldest and most problematic for maintenance (and price!).

was noticeably purer-sounding than both the Antonus, an Arturia software emulation or even the synth's own VCO-2 output, which all have some even harmonics added to the odd-only mixture of a truer square wave. This was noticeable, but may simply be related to the VCO duty-cycle calibration. Other than these points, it was surprising how close one could get the various comparison synths to respond on simple patches. As I found when comparing an original Prophet-5 to a recent reissue unit, the addition of some very low-level distortion (in that case from a Neve 542 Tape Emulator) can often be enough to provide the last piece of 'authentic vintage magic' to the puzzle.

So where does Korg's new ARP 2600 M fit into the current synth landscape? For those who want a very capable synth that can rustle up an array of more conventional analogue musical tones – but at the same time providing the flexibility for further exploration – it ticks many boxes. It would also serve as an ideal springboard to modular synthesis, or even as an excellent complement to an existing rig.

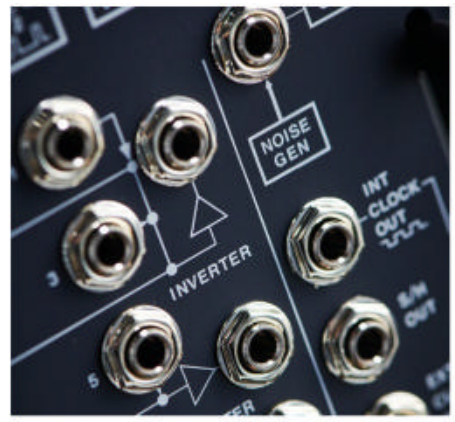
ARP's old rival Moog have the semi-modular Matriarch which sits in a very similar price bracket and offers benefits such as an additional VCO, dedicated LFOs, dual filters and a built-in keyboard. However it lacks the envelope follower, lag processor and a few other elements on the 2600. Arturia's MatrixBrute – again in the same price band – offers a decent complement of socket connectivity alongside a programmable patching system that facilitates full patch recall.

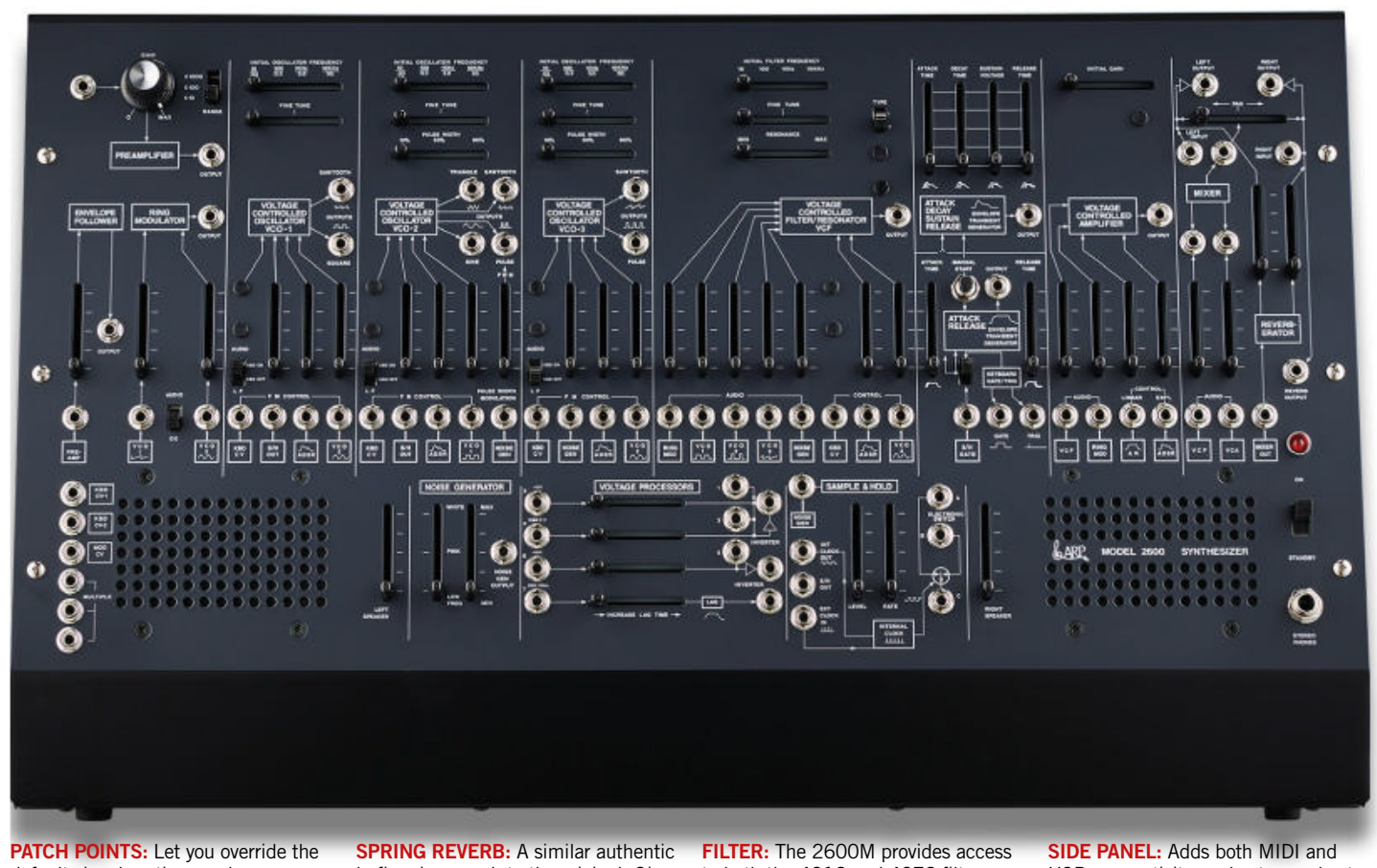
For those who missed out on the full-size Korg 2600, the Antonus represents a more imposing presence and one that claims to have the sound and control range of a '70s classic-era 2600. However, its larger size, robust case and ability to be driven harder than the Korg, come at a significant uplift in price (though still well under that of a refurbished original). Notwithstanding any sonic differences, the Antonus (like the original and TTSH, its DIY progenitor) employs through-hole components, which makes for much easier maintenance or modification in the longer term.

We cannot, of course, also ignore the elephant in the room when it comes to recent recreations/reimaginings of classic synths – Behringer. At around £500, their rack-mount 2600 Gray Meanie loses the loudspeakers but gains some useful additional features. There will always be quality concerns when price is squeezed so much (such as the lack of chassis support for the sockets) – and reputation counts for a lot when shelling out hundreds or thousands on a synth – but only time will be the judge on this front.

There are also many plugin takes on the 2600, including TimewARP 2600 and versions from Arturia and Cherry Audio.

Ultimately, direct comparison of so many competing versions can be fruitless as they often feature different parameter ranges or improved features. However, given Korg's pedigree and the fact that they teamed-up with ARP co-founder David Friend to produce their version, you'd expect to be in a relatively safe pair of hands. What's perhaps more important though is how the 2600M sounds – and the answer is 'very good'. FM





PATCH POINTS: Let you override the default signal routings and access additional features

SPRING REVERB: A similar authentic lo-fi spring reverb to the original. Give the case a knock and hear it twang!

FILTER: The 2600M provides access to both the 4012 and 4072 filter types found on the original 2600

SIDE PANEL: Adds both MIDI and USB connectivity, and acts as a host for external USB keys or controllers

FM VERDICT

8.8

Neither the most expensive, nor cheapest, take on this classic, but for capturing the allure of the original it ticks the most important boxes

IK Multimedia AmpliTube X-Gear pedals €300 each

IK place the AmpliTube experience under foot. **Robbie Stamp** gets into gear

CONTACT **WHO:** IK Multimedia **WEB:** ikmultimedia.com **KEY FEATURES** Four DSP-powered effect pedals covering distortion (X-Drive), reverb (X-Space), delay (X-Time) and modulation (X-Vibe)

The X-Gear quad of multi-effect digital stompboxes have something of the completist's catnip about them. The neatly styled yet robust anodised aluminium casings each house a DSP powered core of 16 effects algorithms backed up by 300 preset slots (50 factory), ten rotary encoders, three footswitches, MIDI I/O, USB interfacing for preset management and recording interface usage, expression/dual footswitch control and a comprehensive set of global and preset based parameters to tweak until the end of time.

Drive in

X-Drive's 16 algorithms include modelled classics (Fuzz Face, Big Muff Pi, etc), some essentials (booster for IRL amps, valve overdrive) and a bitcrusher. There's a great deal of control on offer for each effect from three-band tone controls and gating/compression to model specific alterations, and the high sonic quality is matched by a responsive playability across the board. The X-Mode, holding the current preset footswitch down, provides a signal boost which is a lovely addition for solos and lifts when used live. Fuzz, fizz, roar or just a little crunch, X-Drive has it all covered.

Vibin'

Like X-Drive, X-Vibe mostly carries modelled classics such as the MXR Flanger Doubler, and Univox Uni-Vibe. The non-name brand algorithms include chorus, rotary, tremolo, step slicer and step filter. The preset banks carry two slots to correspond with the two preset footswitches as the third is on Tap duty. Also like X-Drive there is more flexibility here than any of the 'real deals' and it runs most of the gamut of modulation effects, sounding full, fruity and ever so swishy the whole way. Setting an expression pedal to the modulation speed control is a must.

In Time

X-Time, along with X-Space, does not carry models of real world units, but this is no loss when delving into its smorgasbord of delay/echo. The tap footswitch and BPM/MIDI clock sync mean perfect timing is on the menu, but the modulation parameters and expression pedals can just as easily warp these excellent delays into something less regimented. The X-Mode maxes out the feedback on each algorithm which is a simple but oh-so-useful performance tool. The analogue/tape delays bring the lushness, whilst the Dual and Pattern conjure up complexity and the Pitch, Harm and Arctic open the effects space of many a boutique digital delay.

In Space

X-Space, much like the Eventide Factor pedals, is likely to find work outside of guitar world. The Room, Chamber, Plate and Spring algorithms, when kept short, can really lift a source without smearing or swamping, though when lengthened they can all produce stunning results. Adding expression pedal action to the mix can either help your instrument ride the 'verb or warp it into something more colourful. At the lengthy end there's so much to space out with, from the epic (Church and Hall) to the modulated/magical (Magnetic, Ethereal, Bloom) to the pitchshifting twinkles of the two Shimmer effects. The presets are a great place to start, but the detailed parameter set of each algorithm allows for more tailoring than Savile Row.

In reality

Each X-Gear pedal offers a mix of flexibility, sound quality and creative range that, for the price, is hard to equal. The high-quality effects are made more useful by the host of features packed in around them, from the multi-function footswitches to the USB interfacing. Guitarists may be the primary market, but for synths, keyboards and reamping these are pedals that can keep giving. FM

FM VERDICT

8.9

The X-Gears offer extensive feature sets packed around top-notch effects that cover all bases without skimping on tone or tweakability

THE PROS & CONS

+

16 high-quality effects algorithms in every pedal

Easy to program, manage and archive

Dual live and USB interface use

–

Many useful features only accessible through the Parameter encoder

Universal Audio Volt 76 series from £215

UA have finally joined the affordable audio interfacing party, reports **Jono Buchanan**

CONTACT **WHO:** Universal Audio **WEB:** uaudio.com **KEY FEATURES** 2-in/2-out (276) or 1-in/2-out (176) USB 2.0 audio interface, 24-bit/192 kHz audio conversion, Mac, PC, iPad, and iPhone compatible, Vintage Mic Preamp mode and built-in analogue circuit based on 1176 Compressor, USB bus powered, Direct Monitoring, MIDI In/Out **PRICING:** Volt 1 76, **£215** Volt 2 76, **£265**

Until now, UA seemed happy to cater to the 'pro' market alone. That changes with the release of the Volt interfaces, which arrive to disrupt the more affordable end of the audio interfacing world. Here, we're focusing on two of the more eye-catching designs, the Volt 176 and 276.

In the box you'll find the interface itself, a USB cable for connection and another to provide power; whilst the interfaces are bus-powered, the option to plug in may be reassuring for some. Installation is simple. Follow a link to the UAD website to download UA Connect, which then lets you register, install firmware updates, and then download any items of the bundled software you like. These include Ableton Live Lite, Melodyne Essential and assorted instruments and effects including LABS from Spitfire Audio. But let's be immediately clear; not only are the Volt interfaces a departure from the cost of previous UA designs, they have a very different remit too. There's no UAD plugin hosting, onboard software processing nor Console software to configure recording setups. Instead, the Volts are plug-and-play USB-C interfaces which offer UA's excellent preamps and, in the case of the two units on review, the added benefit of some onboard analogue processing to bring the flavour of two legendary Universal Audio designs to the tracking stage.

To focus on the 276, the interface is a desktop module, with combo XLR/TRS inputs on the front panel, with phantom power (one button for both inputs), Instrument switches and a headphone port (with generous gain), alongside a headphone volume dial. The upper panel is where the main action is, with Gain dials per channel, plus the option to switch in 76 Compressor and Vintage options. The first speaks for itself, with an analogue circuit enabling you to choose 1176-style Vocal, Guitar, Fast or Off one-button compression at the recording stage. Whilst the Vintage option is less explicitly named, it provides the tube emulation, gentle saturation, top-end lift of UA's classic 610 channel. No additional controls are available for either option; you won't find Ratio switch options for the 76 Compressor, for instance. But all three compression settings give a characteristic flavour without going overboard. Otherwise, the dominant Monitor dial controls output volume to speakers, and a blue-lit Direct button enables direct monitoring by routing the inputs to the outputs. Round the back, you'll find stereo outputs, the USB connector and MIDI In/Out ports.

The 176 offers all of the above but limits itself to one input channel.

The Volts are a radical departure for UA, offering an affordable taste of the brand's key ingredients. They're incompatible with plugins from the UAD store and don't even work with UA's LUNA software. But they absolutely deserve to shake up the budget interface market with a great design, a plug-and-play workflow and hard-to-beat audio conversion. FM

Brings the flavour of two legendary UA designs to the tracking stage

THE PROS & CONS

+

Classic UA recording channels with Vintage and 76 Compressor embellishments

UA quality at an affordable price

Attractive, intuitive, easy to use, plug-and-play design

–

No scope for expansion beyond the limited I/O

If you're attracted by UAD's plugins, the Volts are *not* for you

FM VERDICT

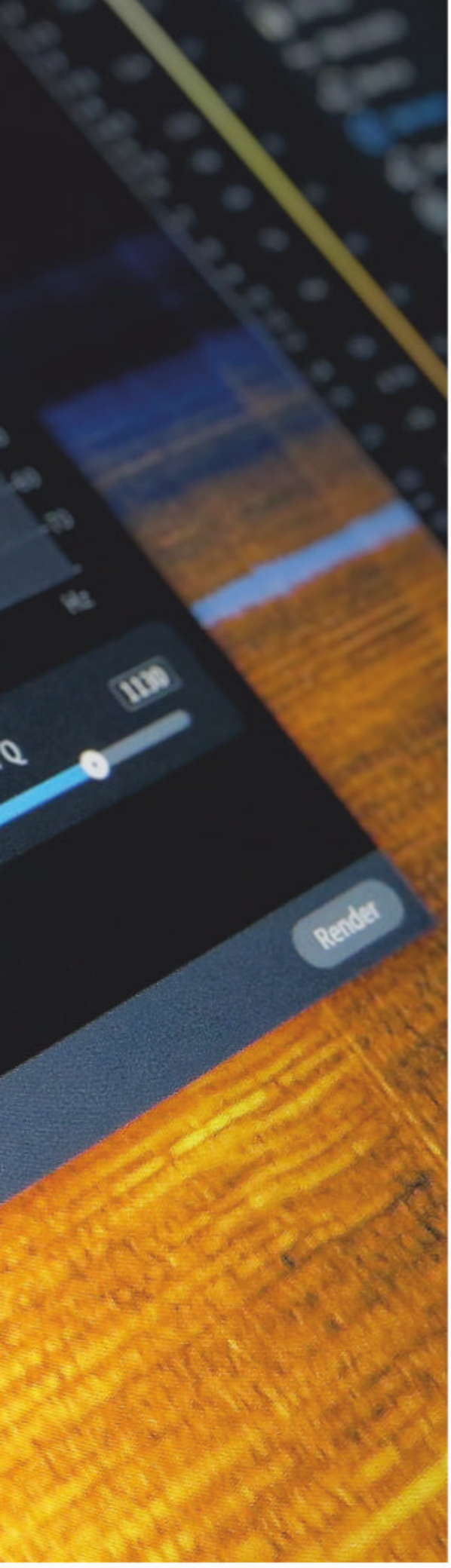
9.0

Bad news for other affordable interface makers: these are great, with a spritz of hard-to-resist recording history magic on top

iZotope RX 9 from $129

The audio repair colossus reaches its ninth incarnation. **Robbie Stamp** explores what's new

CONTACT **WHO:** iZotope Inc **WEB:** izotope.com **KEY FEATURES** **OS:** Windows 10, macOSX 10.14.6 - 11.6 **SUPPORTED HOSTS:** Logic Pro, Pro Tool 2021, Live 11, Cubase 10.5-11, Nuendo 11, Studio One 5, Reaper 6, FL Studio 20, Audition CC, Premiere Pro CC **SUPPORTED FORMATS:** AAX, AU, VST2, VST3 (64-bit only) **PRICING:** RX Elements **$129**, RX 9 Standard **$399**, RX 9 Advanced **$1,199** (upgrade and subscription options available)



THE PROS & CONS

+

Restore Selection and expandable History pane are welcome additions

For ADR work, the Dialogue Isolate and Ambience Match are much improved

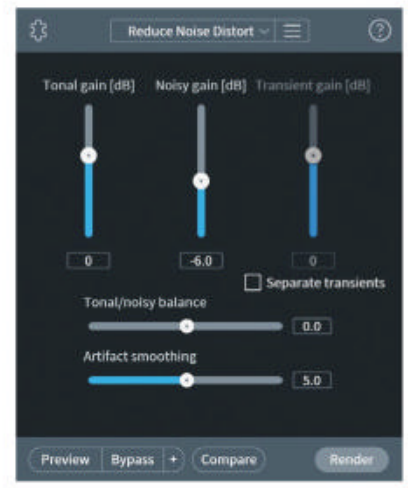
The dynamic De-hum mode really extends the module's capabilities

−

The update is a tad skinny for most users

VARIATIONS ON A THEME

At the heart of many of the modules lie machine learning aided algorithms. Some need cues in the form of sections of the noise they need to learn patterns from, such as the De-noise modules: Spectral, Voice and Guitar. Many also offer an adaptive mode where they are performing their own analysis. The Deconstruct module allows the user to split noise from tonal sounds and transients, and this is, to a large extent, what most other Repair modules do, whether that's the transient removal of De-click and Mouth De-click or the noise reduction of De-rustle, De-wind and De-plosive. With this in mind, a user can experiment with modules not necessarily aimed at their source, such as using De-wind or De-plosive on a boomy drum mix.



It's hard to imagine the audio production landscape without iZotope's RX repair and restoration platform. With each generation it's sharpened to become a formidable tool for a huge range of tasks, straddling post-production, music recording/mixing and content creation with pricing schemes to fit many budgets. RX 9 is not a major update, but there are refinements and additions for existing users. For those coming to RX fresh, it's an opportunity to experience this industry giant.

The spectrographic centrepiece of RX remains as flexible and revealing as ever, which along with the selection toolset provides the raw editing power this application is famous for. Even for those who've worked with it for years, the display provides new insights that expand our understanding of sound. By allowing frequency as an editable component, alongside time and amplitude, the possibilities for editing are huge, even with simple tools, such as gain change. The ever impressive range of selection methods, including harmonic series, coupled with the waveform/spectrograph overlays make short work of analysing audio for clicks, pops, hums and noise.

The sidebar module list remains unchanged from RX 8 and though the upper portion of the sidebar (Repair) is home to the stars of RX, the lower two are (Utility and Measurement) due some serious respect. The EQ is a 6-band-plus-filters slice of excellence and the trio of time and pitch options produce high-quality results. Some integrate with the Instant Process (attenuation, fades, gain) function which applies the last used setting to whatever you highlight, which is a time-saver on more laborious edit jobs. For the Advanced package the Leveler and Azimuth modules are gems for post production and restoration tasks respectively. Nestled between all these is the third-party plugin host that brings VST and AU collections.

Beneath Utility and Measurements is the History section, which is now (drum roll) expandable. This may not seem earth-shaking, but for those who have scrolled endlessly though tiny edits in previous versions, this simple improvement is welcome. The History list is also the host of a new feature, Restore Selection. This allows users to roll back processing for the currently selected area on the spectrogram, ie, it can be frequency specific. This is an efficiency boost as it may often be quicker to undo what you don't need processing than it is to make complex initial selections. As ever, the whole history is saved when the proprietary .rxdoc format is used.

Though the iconic spectrographic display, selection tools and utilities are hard to beat, the range and quality of modules in the Repair section really make RX stand out. This latest version brings new modes to a number of these, in both the Standard and Advanced packages, as well as a new algorithm for Dialogue Isolate (Advanced). This was already a powerful module, capable of preserving voices whilst cutting back a serious amount of background noise, particularly the stuff that a de-noiser can't learn a profile for, but having tried the new algorithm on the same source there is a distinct improvement in artefact reduction. Further to this is a new mode for Ambience Match (Advanced) which allows noise environments to be

18+

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THE ALTERNATIVES

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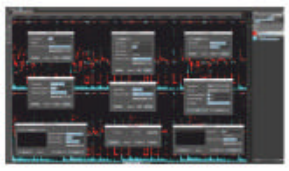
accusonus.com



Steinberg SpectraLayers 8 from £25

A combination of a flexible spectrographic UI coupled with a host of repair and restoration tools (in the Pro package) that can perform utilitarian and highly creative duties, layering and deconstructing audio as it goes. ARA 2 support enables DAW project window integration for Cubase and Nuendo users.

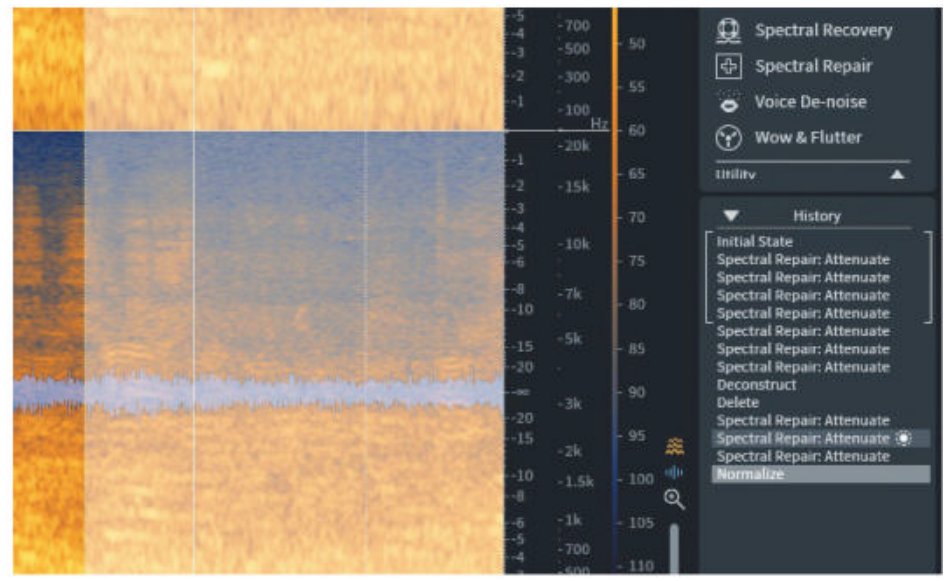
steinberg.net

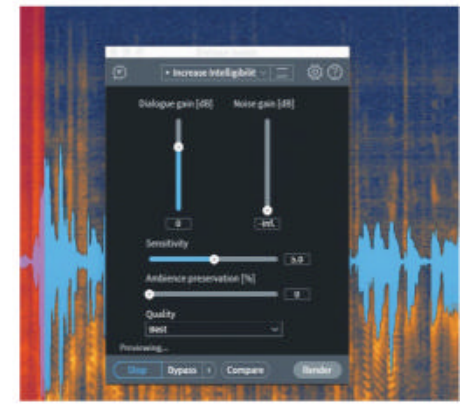
applied to recordings, ie ADR or dialogue cleaned up with Dialogue Isolate/De-reverb, to maintain continuity. The new mode takes the static learned-loop basis and adds Movement and Randomness controls to mitigate overt repetition in complex backgrounds that may contain audible cues. Adding a threshold for the ambience learning also aids screening for foreground audio events that can cause a loop to be identified.

The De-hum module (Standard) has also received a new mode which brings a dynamic response to the equation. The static version is good for mains hums or other ringing tones that hardly vary, but those whose harmonics are of a more complex structure need additional help (like a pass of Spectral De-noise). The dynamic mode capably takes the task on with adjustable sensitivity, up to 1,024 notch bands and a limitable frequency range. A multi-pedal guitar amp recording was far easier to clean up fewer artefacts in quiet passages. The other modules retain their consistent high quality, whether in the Elements, Standard or Advanced versions, so users coming fresh to RX will attain new levels in audio repair, restoration and enhancement.

For the all-important workflow, the Module Chain remains a great way to transport complex renderings across selections and files, while the batch processing is a now finely honed system for bigger jobs. Many of the modules are also installed as plugins, such as De-clip, De-click and De-hum, for tasks that are easier kept in the DAW, though the RX Connect plugin can also send an audio clip on a round trip via the main app for access to full repair shop. RX 9 has one last card up its sleeve, the Spectral Editor for Logic Pro, an ARA extension that brings a spectral repair and the RX spectrogram and tools to a DAW. Hopefully this will be rolled out for other ARA-compatible DAWs.

RX has offered good value through its three pricing tiers, which remains unchanged from RX 8, so new users should not hesitate to get on board if there is a repair/restoration need going unmet in their audio life. For existing users this update feels a little light to spend out on, though iZotope are always canny with their loyalty offers. If post-production work, especially ADR, is your bread and butter then the Dialogue Isolate and Ambience Match improvements, coupled with the history/restore selection tweaks could really swing it. Either way, Logic Pro users are the ultimate beneficiaries here; other DAW users will have to live on in hope, for now. FM





DE-HUM: The new Dynamic mode allows for more complex hums and tones to be attenuated without trashing the source

DIALOGUE ISOLATE: This upgraded module ably separates the voice from all manner of noisy backgrounds

HISTORY: The newly expandable History pane makes navigating long edit lists easier alongside a selection-based undo function

CHOOSING A VERSION

RX is sold as three options: Elements, Standard and Advanced: the website hosts a clear comparison list. Both Elements and Standard offer tools to tackle most repair tasks. The pro-priced Advanced version modules are class leaders, with heavy duty tools for all disciplines, particularly vinyl and tape restoration work. For post-production engineers many modules pay for themselves. Beyond the Advanced version is the RX Post Production Suite which adds many other useful tools for film/TV work. A subscription edition, iZotope Music Production Suite Pro, is also available in annual/monthly formats.

FM VERDICT

8.9

RX has been refined into an extraordinary platform and this update brings no major changes, but Logic Pro users will rejoice. Still the best

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Alesis V49 MkII

£99

Alesis' V49 MkII offers more performance features and control with great affordability. **Jono Buchanan** plugs and plays

CONTACT **WHO:** Alesis **WEB:** alesis.com **KEY FEATURES** 49 full-size, velocity-sensitive, synth-action keys, 8 velocity-sensitive, LED-backlit pads, Arpeggiator with 6 modes, tap tempo, time division, gate and swing controls, Note Repeat, 4 MIDI-assignable knobs, Pitch-bend and modulation wheels, 1/4" sustain pedal, USB-powered

The battle for your controller keyboard allegiance is fierce, with several companies offering all-singing, all-dancing designs at increasingly affordable prices. Some, like Native Instruments, have tailored their keyboards to their software, making them an integrated choice for those heavily invested in specific hardware/software workflows. But if your primary devotion is to your DAW and you're seeking a more general-purpose controller keyboard, Novation, M-Audio and Alesis are among those offering ever-greater features at increasingly low prices. The latest controller to tempt is from Alesis, with V2 of the V49 controller available for less than £100.

The redesign of the second-generation V49 is substantial. The original offered a 49-key instrument but placed its additional controllers – a set of eight pads, function buttons, pitchbend and modulation wheels and four rotary encoders – to the left-hand side, making for a wide, thin instrument which rather assumed you wanted to play notes with your right hand and provide additional control with your left.

The MkII design moves this extended functionality above the keyboard to a more central location. Whilst it is still biased towards the left-side of the upper panel, it allows for a greater breadth of interaction between the keyboard and wider control set. However, Alesis have resisted the temptation to extend the rotary dial and pad offer on the MkII, leaving these at four and eight and there are still no sliders present. Round the back, you'll find the USB port which provides the V49 with power, along with an on/off rocker switch and a Sustain pedal port.

> It allows greater interaction between the keyboard and wider control set

The most radical update comes in the form of the front-panel buttons. Whereas the V49's predecessor had four freely assignable ones, the MkII offers a range of direct functions, many of which act as shift keys for further functionality from the keyboard itself. For instance, there is an inbuilt Arpeggiator, whose Type, Swing, Time and Octave can be manipulated from the keyboard. You can also Tap Tempo and engage Note Repeat functionality from the Pads, whilst you're triggering notes or drum hits.

There's a greater emphasis on performance from the V49 MkII, as there are functions here to trigger your imagination in more musical ways than before. The downloadable Editor provides a graphic interface to manage current controller assignments and settings, whilst the bundled software includes an MPC Beats bundle, with seven Beats Expansion Packs. 60 free piano lessons from Melodics are also included.

It's a competitive market and whilst the V49 MkII is a price-buster, for not much more money, you'll find alternatives with sliders, more pads and dials, from both Alesis and its competitors. However, the MkII is a substantial improvement on its predecessor and is a solid entry-level keyboard controller. FM

FM VERDICT

7.5

This is a solid controller that substantially improves on its predecessor, but the V49 faces stiff competition at this price point

THE PROS & CONS

+

Lively keyboard action is responsive and springy

Redesign places controllers, pads and extended functions more centrally

Sync'able multi-pattern Arp and Note Repeat increase performance capabilities

–

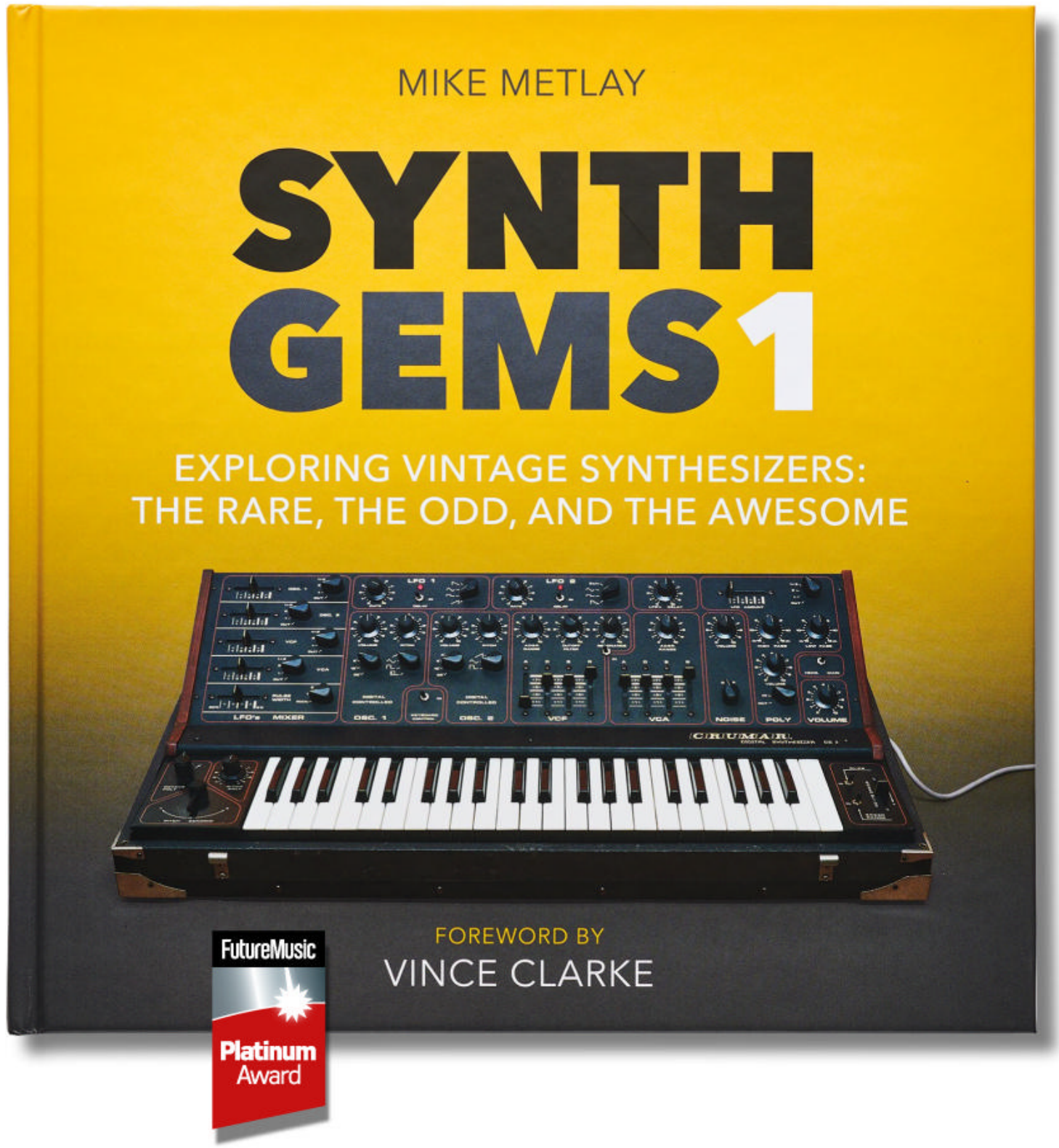
You might want more control than four rotaries and no sliders

Still more function than flair

Synth Gems 1, by Mike Metlay £53

Dr Mike has unearthed a veritable treasure trove of vintage synths for this landmark book, **Simon Fellows** finds

CONTACT **WHO:** Bjooks **WEB:** bjooks.com **KEY FEATURES** 320-page hardback book for anyone who loves synths, or even just great photography



Mike Metlay's *Synth Gems 1* chronicles iconic synthesisers from 1970 to 2000 in glorious colour and extraordinary detail. It offers insights into more than 60 vintage synths, lovingly documented more than 320 pages with hundreds of stunning images and thousands of well-chosen words.

Vince Clarke provides the foreword, which sets the tone for the entire book. "I definitely believe", writes Vince, "that the whole electronic music scene has made it possible for people to have ideas, to express and record those ideas and to make sounds and to write songs without necessarily needing to be technically brilliant. It's very liberating and democratising – much more than punk turned out to be."

Synth Gems 1 is similarly accessible. What could quite easily have been a dry inventory of electronic kit is instead a celebration of musical instruments, a book that will satisfy musicians and music lovers as well as circuit board geeks.

Many of the usual suspects are here – Moog, Oberheim, Roland, ARP, Sequential, Yamaha and Korg are all well represented. But this is more than an A-Z of famous synths. Rather cleverly, Mike has woven in the 'rare, the odd and the awesome' too, so for every Jupiter or Prophet there's a Murom Aelita, Technics SX-WSA1 or Casio VL-Tone. These quirky inclusions add an additional dimension to the book, and it's all the richer for it.

Every sumptuous photograph was commissioned for *Synth Gems 1*, so thankfully you won't find generic, fuzzy black and white period shots here. Instead, photographer Peter M Mahr and the team at the EMEAPP museum in Pennsylvania, USA, have done an incredible job documenting each synth with a generous hero shot and numerous detail images. In all, there are well over 300 beautiful photos to lust over.

There are some obvious omissions, no DX7 for example, but it was never Mike's intention that *Synth Gems 1* should be comprehensive. As the book's title suggests, Danish publisher Bjooks promises that this is just the first of a series of *Synth Gems*, so it will be interesting to discover the direction the second volume takes.

Mike Metlay is uniquely qualified to write this book. He holds a PhD in nuclear physics, hence the affectionate moniker Dr Mike, but has spent most of his working life as an editor of the US pro audio magazine *Recording*. Speaking from his home in Colorado, he told us what sparked the idea for the book and how it evolved.

"The core idea for the book," said Mike, "essentially 'a big book of synth pictures for enthusiasts to drool over', came from publisher Kim Bjørn. We had many long discussions about the book's format and intent, and I gradually shaped it into what it is today.

"Synthesizer enthusiasts have a deep-seated appreciation for the synth as a physical object, not only as a creator of beauty but as something beautiful in and of itself. They delight in the beauty of the utilitarian – like an elegantly-designed automobile, building or chair. What I have done is focus that feeling into a book that is timeless, inspiring, informative and, above all, beautiful," says Mike. FM

FM VERDICT

9.5

An exquisite book that delivers on both style and substance in equal measure. Weighty but never heavy going, it's a must-read

THE PROS & CONS

+

Gorgeous images

Beautifully written

Accessible even for non-nerds

–

Pricey

Ocean Way Audio Pro 3 $2,994 per pair

How much should you spend on your monitors? **Jon Musgrave** tries out Ocean Way Audio's latest high-end nearfields

CONTACT **WHO:** Ocean Way Audio **WEB:** oceanwayaudio.com **KEY FEATURES** Frequency Range: 45Hz to 20kHz **ENCLOSURE TYPE:** Rear Ported **LF DRIVER:** 7" with aluminium dome **HF Driver:** 1" with silk fabric dome **ONBOARD AMPLIFICATION:** Class D 125W (LF), 90W (HF) **MAXIMUM SPL:** 110dB **INPUTS:** Analogue XLR, Digital AES-3 **DIMENSIONS:** 229 x 343 x 356mm **WEIGHT:** 10.4kg

Ocean Way Audio produce a number of high-end audio products, and are probably best known for their impressive horn-based monitoring systems. A few years ago they introduced the more traditional-looking Pro 2A large nearfield and this is now joined by the more compact Pro 3.

But first, the elephant in the room. These are expensive monitors, and although a quick look at the component spec coupled with the fact they're made in the USA all contribute to that, there's no getting around it.

However, with that issue set aside for now, let's look at what you're getting. The Pro 3 is a 2-way active monitor built around a 7" aluminium cone LF driver with vented cast aluminium chassis. This is paired with a 1" silk fabric dome tweeter. Twin onboard ICEpower Class D amps (125 watts for LF and 90 watts for HF) deliver plenty of volume. The enclosure is of uniform shape with rounded edges and corners, and is rear ported. It's also quite deep front to back (343mm). Nevertheless, at 356mm high and 229mm wide they fit the nearfield profile perfectly and are considerably more desktop friendly than the Pro 2A.

On the back panel you'll find the power switch, analogue XLR input, digital AES XLR input and output and master volume tweaker. There are no onboard EQ options. The rear power switch is illuminated, but there's no front panel power indicator, which I'm sure will annoy as many people as it pleases. In fact the overall design is pretty low key, which I like. Couple this with the chunky feel (over 10kg apiece), quality finish and aforementioned spec and the box fresh monitors ooze quality in a confident, understated way.

First listen is always exciting with new monitors and these don't disappoint. They have an impressive mid-range clarity which delivers some of the best instrument separation I've heard from a nearfield. In fact, this definition coupled with the overall stereo image, broad sweet spot and a silky, unhyped top-end really took me by surprise. Ocean Way Audio quotes a frequency response within +/-0.5dB between speakers and this definitely contributes to the accurate imaging.

Despite the more compact size, the Pro 3, much like the Pro 2A, aims for good, low-frequency extension, and though the specification quotes 45Hz, I hear plenty below that point. But more significant is the punch and thump you hear or actually feel at these low frequencies: certainly impressive from monitors of this size.

The low frequency extension and upfront mid range mean the Pro 3 doesn't feel particularly congested in the low mids and I think this contributes to a pretty open sound. After lengthy listening sessions I also didn't find the sound particularly fatiguing despite the reasonably forward mid and upper-mid range. Of course, with no onboard EQ there's no way to tweak this onboard, so it's good news that they've got this right.

The Pro 3 competes with similarly capable designs from the likes of PMC, Amphion, ATC and so on. Each has their own sonic signature, and auditioning monitors is vital, particularly at this price. That said, there's an effortless clarity to the Pro 3 which definitely marks them out as something special. FM

THE PROS & CONS

+

Wonderful mid-range clarity and stereo imaging

Impressive bass extension for a compact nearfield

Plenty of volume

Premium components and quality finish

–

No onboard EQ

Pretty expensive

FM VERDICT

9.1

Excellent mid-range clarity – and then focused imaging throws in impressive bass extension for good measure. Pricey for a good reason

Herbs and Stones Liquid Foam £369

From the north of Italy comes what **Rob Redman** can only describe as a box of inspirational happy accidents

CONTACT **WHO:** Herbs and Stones **WEB:** herbs---stones.com **KEY FEATURES** 2 sequencers, Two pole filter, Mono groovebox

I first reviewed the Liquid Foam back when it was a standalone instrument, cased in a wooden box and connecting to other devices via banana plugs. I loved it back then and it has remained a constant source of inspiration, churning out slightly unpredictable sequences and gorgeous tones. The only real downside I could see to it was that it wasn't the easiest to use as part of a studio workflow.

Herbs and Stones have now released the Eurorack version of Liquid Foam and I'm so pleased they have, as having the wonderful output in an easy to integrate module makes this even more of a sound investment.

Liquid Foam is a single VCO module that can output PWM, variable saw and triangle, all of which can be output singularly or together. There is a versatile two-pole 12db filter, which is buttery smooth in both low pass and high pass, plus a CMOS-based drive circuit for added grit. Tones range from soft and delicate to thick and squelchy.

The envelope generator is a bit quirky, in general terms, but its decay-only (invertible) output works well, especially when paired with the sequencer, which is perhaps the quirkiest feature here. There are two of them, each with four patch points and here is where the fun begins.

As I've said of Liquid Foam before, it isn't the type of module that you programme for repeatable results, that stick to a grid, but is an absolute hoot to play with. It can generate all manner of tones and patterns, by mixing voltages from the LFO, envelopes, clock (which it has in and out jacks for) and pitch controls. The options for interoperability here make for surprises and once a few hours have been spent experimenting, it all falls into place and patching becomes more natural as the mental muscle-memory connects the dots. Pairing this with the rest of a rack turns the whole thing into a more experimental adventure, which I give high praise for.

Physically the Liquid Foam is very similar to the standalone version, as you'd expect, just on a smaller scale. It's a shallow module so will fit in any skiff. Roadworthiness is high too, as everything feels secure, well constructed and should withstand the rigours of gigging. Labeling is clearly printed and although some functions are mysterious, navigating is easy.

All in all, my opinion of Liquid Foam is unchanged, other than to congratulate its developers on making a Eurorack version, meaning less power cable clutter and desk space needed and closer interaction with other modular gear. Liquid Foam remains one of the most oddly rewarding modules out there. It continues to inspire and that is a hallmark of a great groovebox. FM

> Churns out unpredictable sequences and gorgeous tones

THE PROS & CONS

+

Great sound

Lots of functions for the size

Easy to find happy accidents

Works well in a rig

–

Takes a little learning

FM VERDICT

8.0

Liquid Foam remains a rewarding and musical module. Investing time to learn its features is a must and, once done, will pay you back in spades

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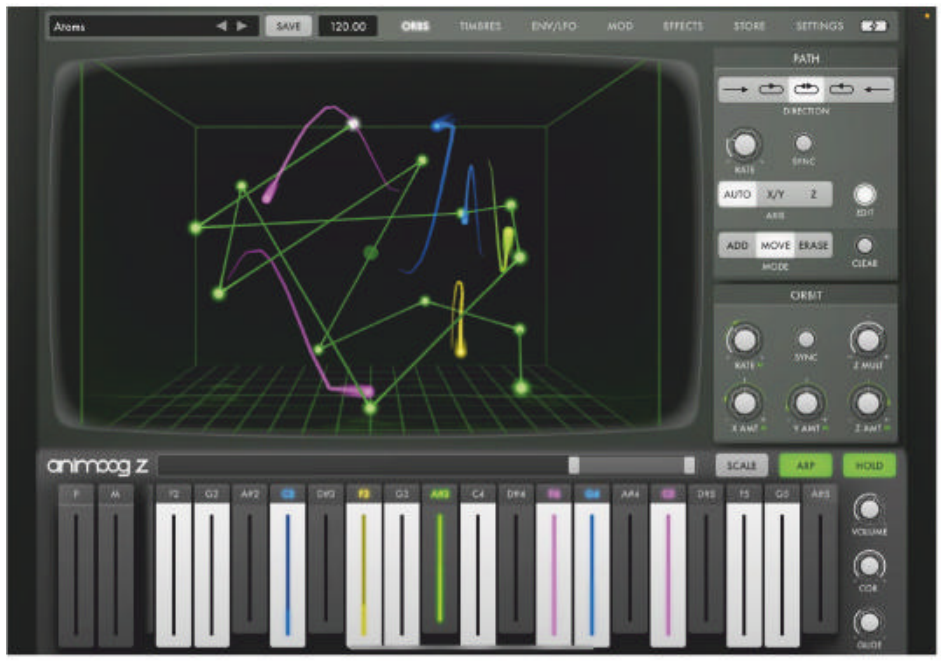
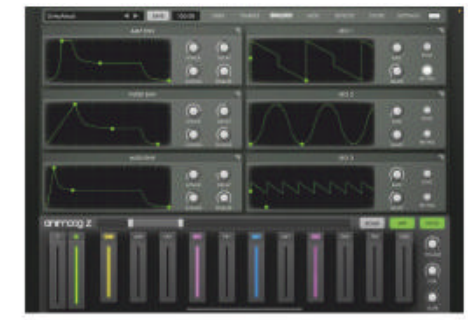
Moog Animoog Z

£8.99 (in-app)

Rob Redman takes Animoog Z for a spin round some new orbits to see what Moog's update offers over its predecessor

CONTACT **WHO:** Moog **WEB:** moogmusic.com **KEY FEATURES** 16 voice polyphonic wavetable synth, Available for iOS, iPadOS and Mac **PRICE:** Free to download, but full synth engine access requires an £8.99 in-app purchase





The original Moog Animoog was an interesting concept for mobile musicians and sound designers, with a novel interface. The new version takes things into 3D, with the addition of an extra dimension of sound design.

So, what is it? Animoog Z is a 16 voice synth that is in essence a wavetable synthesiser. At first glance the retro mad scientist's lab GUI might lead you to believe it's purely for classic tones but, while it can do that, it is capable of some remarkably modern sounds too.

If you look at the main viewer top down you'll see a grid, where each row represents a wavetable, chosen from an extensive list of presets (including classic waveshapes, noise and so on), and the columns scan through the wavetable. If that view is rotated, the grid becomes just one side of a cube, where the back face is a second set of wavetables.

This is the biggest difference between the original and the Z versions, as you can now plot points in 3D space. As the orbs (locators for the current position in space) traverse the set path they are now mixing the wavetable positions on both grids, providing the extra dimension. This is based on a technology Moog calls Anisotropic Synth Engine. There isn't much out there that is similar, except maybe the Vectorsynth.

As with the original, orbs can have orbiting points that add complexity to the patch, with overtones having rate and distance controls, sending them into other parts of the grid. It's tricky to explain in words but the effect can be subtle or extreme, depending on the settings and the wavetables loaded. Wavetables themselves can be chosen from a large library, to which can be added user wavetables, as well as items from the previous version, so if you are upgrading any saved patches are still usable.

While this style of sound generation is not exactly traditional, other aspects of Animoog Z are. There are three LFOs, pitch and mod wheels and envelope generators for amp, filter and mod and a wonderful modulation matrix. It's not limitless, with ten slots, but that is plenty for most patches and assigning sources to destinations is fast and easy.

If you've used products like the Moog One, you'll be in familiar territory for deeper control, as certain panels, like the LFOs, have a small triangle which, when clicked, maximises the panel showing a larger viewer alongside extra controls. I like this method, as it keeps the GUI clean and easy, showing the more commonly needed options while making it simple to edit more deeply.

The effects page displays like a pedalboard. Effects like filters, echoes and a looper are here, each with a number of controls and an on/off switch. Animoog Z would be good without effects but is great with this small but well-formed collection.

This all makes for a great sounding instrument but that means nothing if it isn't playable. Luckily Animoog Z has this covered too. Both mobile and desktop versions have the touchstrip keyboard, which is best on iPad as it allows for polyphonic playing and adjustment, so the larger surface is a real boon here. I found this to be easy to play, with taps and sweeps both along the keyboard and up the keys (assignable modulations for this) but where the fun really begins is on the desktop.

Loaded as a plugin inside Logic (as an AUv3 plugin) Animoog Z turns into a more usable instrument for production, as it can integrate with your clock, syncing various attributes and opening up automation, as well as inclusion of other effects, so your favourite reverb can be used. On top of this is the ability to play using whichever controller you want. I tried a number, all of which worked perfectly, but I had the most fun and creative experience using my Launchpad, where velocity and pressure come into their own.

All in all, no matter what device you are running it on, Animoog Z is a great instrument. It may not be a huge leap from the previous version but what it does offer is thoughtfully implemented and very playable. FM

FM VERDICT

8.0

Offers a creative method of generating new tones and works well across different devices. Try the free version and you'll be hooked!

THE PROS & CONS

\+

Intuitive interface

Versatile sound design tools

Excellent modulation

\–

AUv3 format isn't supported by the likes of Pro Tools and Ableton Live

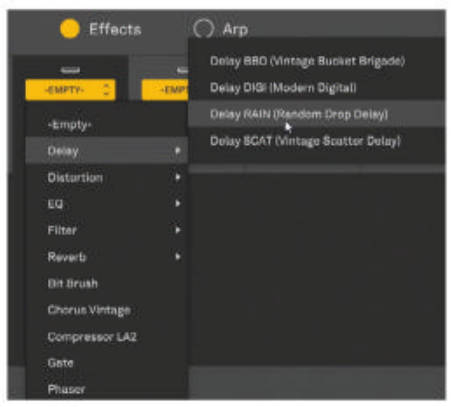
Soundpaint – Juniper 8

from $30

Kontakt soundware purveyors 8DIO need no introduction on the pages of FM, and their supply of largely (but not exclusively) cinematically-focused instruments keep coming to general acclaim. However, it appears that they have also been busy developing their own sample playback engine and complementary set of instruments. The fact that Soundpaint (the name of the software engine and company) have embraced their own software host (usable in both standalone and plugin-based guises) is perhaps no surprise given that other companies, such as Spitfire Audio, have done the same with some of their products – and others, like EastWest and UVI, have been taking this approach for many years.

The Soundpaint site strongly emphasises their quest for authenticity, but quite how this differs from the extensive multi-sampling and scripting possible with Kontakt is not fully explained. However, it seems to come down to both detailed sampling and rendering large numbers of velocity response layers. Certainly our first impressions when using the free '1928 Vintage Grand Steinway' were positive for playability.

The Soundpaint software itself is free to download, and is based around what initially looks like a relatively straightforward four-part sample playback engine. The four different parts can be conventionally layered,



with adjacent parts offering a morphing crossfade function. This apparent simplicity is supplemented with two customisable modulation and control 'Racks'. These add quite a bit of extra functionality (including ADSR and LFO sources), but could perhaps be a little clearer in terms of use. For example, it is possible to show and hide some sections and they will keep functioning in the background, though others (like the delay and filter) only work when selected. This is perhaps an attempt to keep things simple.

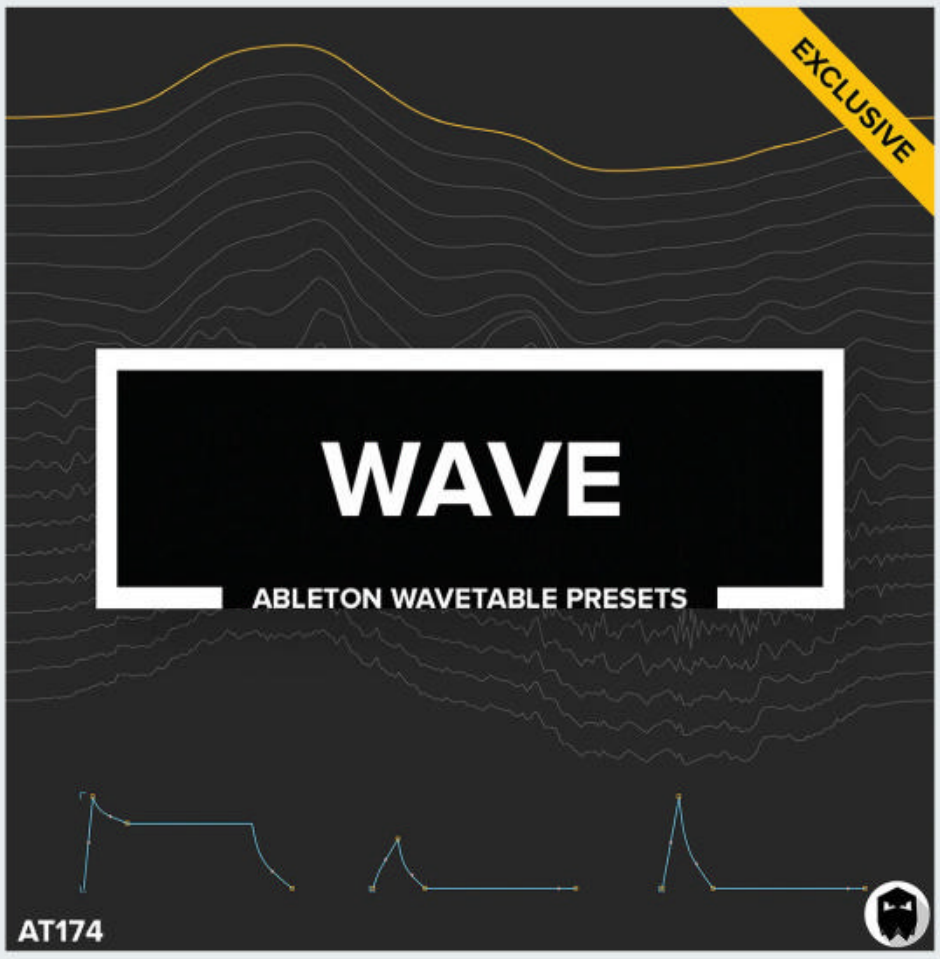
The dedicated effects section impressed us, with the range and quality of effects on offer, and nearly makes up for omissions in the part-shaping department (such as more elaborate per-voice filters). Given that Soundpaint is geared mainly toward pre-created libraries and minor tweaking rather than full-blown sound design, this may be enough for many. Another decent addition is the arpeggiator, which adds useful humanising parameters.

Part of the big Soundpaint sell is the depth of sampling and this is perfectly exemplified in the synth realm by their Juniper 8 UDS instrument that employs their 'Ultra Deep-Sampled' approach to capturing the natural sound variation of analogue synths such as the Roland Jupiter 8. This more than quadruples the sample footprint in comparison to the standard edition. Do you need this level of detail or would you prefer the greater programming options of a fully synthetic virtual emulation? That depends on your needs. The preset programs and parts on offer here are strong, and $30 for the simpler version is a cheap way to access some great tones. ***Bruce Aisher***

soundpaint.com

VERDICT 8.0

Audiotent – Wave From £37



A slick selection of presets, MIDI files and audio loops for Ableton's Wavetable synth. All with a knowing nod to the halcyon days of rave culture. This nostalgic collection has warmed up basslines, trippy arps, meaty textures, glorious pads and some fist-pumping lead lines.

Plenty to help everybody in the place get their mitts on and whip up a banging track, fit for a warehouse, field, or festival tent. All of the included sounds feature macro controls on the 107 processing racks, so you can meld and melt each groove and fiddle with EQ, echo, reverb, phaser, chorus, vocoder, and vinyl distortion, until the sun comes up.

The Ultimate Edition comes with a 2+ hour online sound design course for the more studious musicians out there, too.

Roy Spencer

audiotent.com

VERDICT 9.0

Prime Loops – BAROQ: Medieval Melodies

From $7.99/month

Time to get Medieval with a classical trained pack of throwback tracks suitable for young, old and Middle Ages. The 245+ orchestral loops in this hip-hop and trap-ready collection include Addams Family harpsichord shuffles, plinky plonk piano riffs, sinister organ lines, and some good old-fashioned string section samples. Inspired by the Renaissance funk of early 2000's Timberland and the like, these proud, pompy and preening sounds all swan about like they own the place. And, running from 80-125bpm, they'll rub up nicely to a wide variety of potential music-making suitors, too.

Looking to drag your productions back to the Dark Ages? This set of dramatic keys and chords is worth shining a light on.

Roy Spencer

splice.com

VERDICT 8.0

Sample Magic – Raw Hip-Hop 2

From $7.99/month

Super tough hip-hop selection box, stocked full of thundering stabs and crashes, razor sharp scratches, knocking drums and some real song-starting chords and riffs.

All the major golden eras of neck-snapping street production are being channelled across the deep crates in this series; East Coast realness abounds.

The beatmaker kits, multi-layered music melodies, one-shots, MPC drum sounds, and textures in this savage set all come highly processed to give you maximum sonic impact.

And you get plenty of styles and tones to tinker with. From dusty and jazzy to soulful and Shaolin slick, everything in this pack is ready to add weight to your next boom bap beat.

Roy Spencer

splice.com

VERDICT 8.0

Loopmasters – Hugel Sounds Volume 1

£24.95

Looks like the household fave disc jock has upped his game and got in on the artist pack act. About time, too!

Fans of this Spotify millionaire's club-slaying sounds will be lining up to shave off a slice of his meaty beats to pepper their own paltry productions with. The techno-flecked, disco-warmed loops in this 498MB cluster funk are guaranteed to add a decent dash of style and groove to anything you bolt them to.

And the foot-tapping drums, swinging percussion and laser-focused lead loops, will have people making a beeline for the busy part of the dancefloor.

It's Beatport top ten business. And, if you'd like to soak up that steez, then Hugel is happy to share.

Roy Spencer

loopmasters.com

VERDICT 7.0

Artisan Audio – Sentience – Dark Ambient £24.95

Welcome to a world of deep, dark, dystopian soundscapes. The kind of moody cinematic backing music made for frosty sci-fi landscapes and bleak futuristic realms. It's not for the easily spooked. But, if you hold your nerve, it makes for a very rewarding visit.

The textures and tones in this 496MB loop library are perfect for brassy and bold beatmakers wanting to add some widescreen audio drama to their arrangements. All the drones, synth swells, ominous chords, and murmuring pads in this collection drip with a palpable air of suspense, foreboding and tension.

Tempos lurch from 72 to 151bpm. And, alongside atmospheric loops, you also get techy drums, weighty FX, dank basslines, grim guitars and sick sampler patches.

Roy Spencer

loopmasters.com

VERDICT 8.0

Audio Damage Other Desert Cities

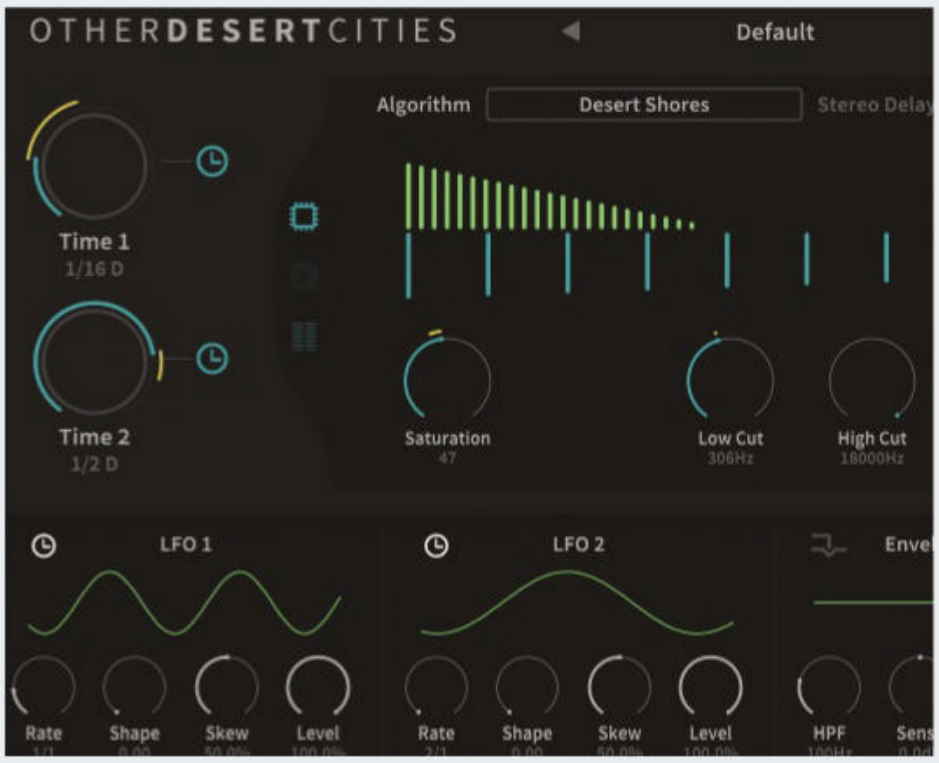
Over the years, Audio Damage have cut a path with some professional, forward-looking plugins, including the granular synthesiser, Quanta, and the algorithmic reverb, Eos. The developer's newest release, Other Desert Cities, is a six-algorithm delay. In ODC, modulation comes from a pair of LFOs and an envelope follower (see *Modulation and Evolution*), but it's those algorithms that take centre stage. Each provides a different set of controls, changing the interface to match.

From traditional tape-based designs to digital tap setups, and even a reversing algorithm, this is a selection that provides a sonic range covering everything from rhythmic delays to mashed-out soundscapes.

Other Desert Cities is available now from **audiodamage.com** priced at $79.

Stereo Delay with Desert Shores >

The first algorithm we encounter is Desert Shores, a traditional stereo delay with a left and right delay signal that can be set to either a time based, or beat sync setting, and each delay can work independently from the other. With this algorithm we can let the delay bounce after the sound at a set time on each delay, or we can use the LFO or envelope to make delay time automated, affecting the pitch in a dub reggae way. We can further sculpt the sound with the Saturator, EQ and Stereo Spread.

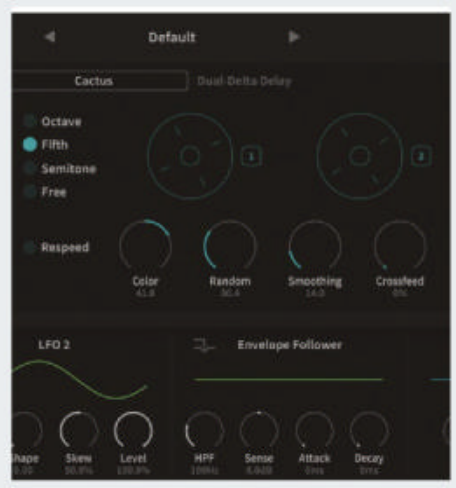


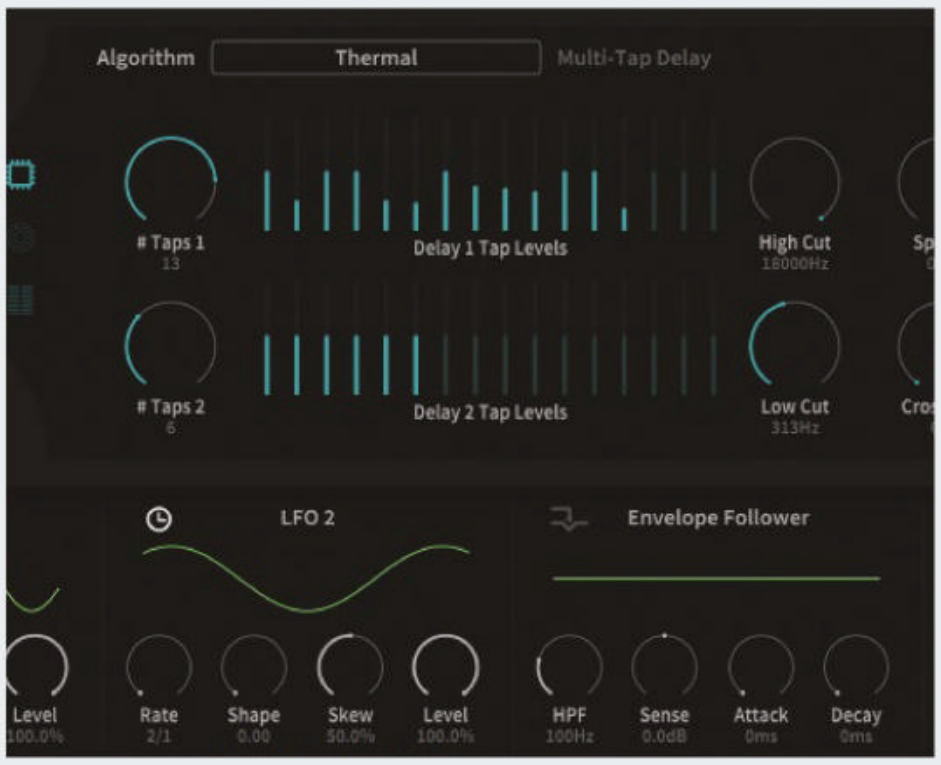
Reverse buildup with Mecca >

The Mecca algorithm takes the input signal and reverses the sound as it passes through the delay signal, creating an effect that bounces off the source sound. If we take an arpeggiated melody and dial up the mix amount of the delay as it goes on, we can create a building effect where the sound begins to repeat and play off itself with the reversed signal. If we combine this with the Diffuser section, we can make an even wider sound.

Creating tones and texture with Cactus >

Cactus is a dual delay algorithm where each delay acts like a tape emulation. We can adjust the speed of each delay, as well as the pitch that the delay feedback is quantised to – settings for this include Free, Semitone, Fifth and Octave, as well as a re-speed option. By changing the speed and pitch settings of the delay we can create new textures from the sounds, or we can add almost granular tonal qualities.





< Thermal tapping delay

Thermal is a dual multi-tap delay that displays the amount of 'taps' as lines on the interface that can be dialled in to increase the amount of times the delay will repeat. Not only can we increase the amount of taps on each delay, but we are also able to dial in the amount of each tap to determine how many and at what position they get fed back into the signal. By changing the time of the delay, we change how the taps are affected in the delay, from rhythmic effects to repeating melodic delay effects depending on speed.

MODULATION AND EVOLUTION

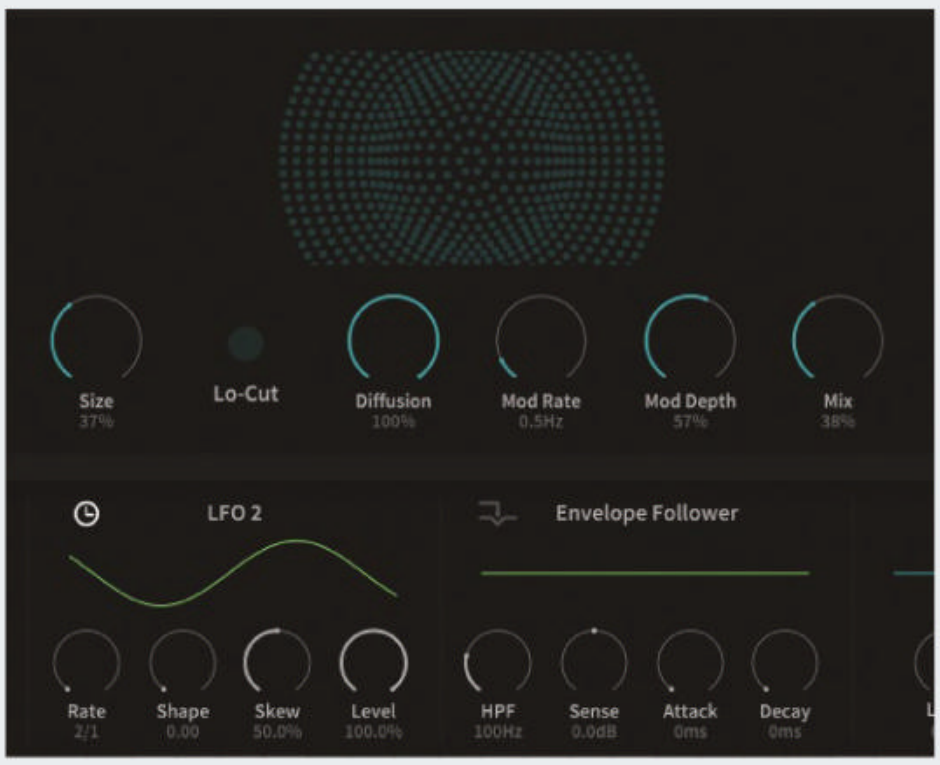
Other Desert Cities boasts some useful tools for modulating each parameter of the delay, with two LFOs as well as an Envelope Follower and mixer section for fine-tuning the amount that the modulators will affect each part of the sound. These tools allow for interesting evolving and reactive effects, allowing you to easily assign these to any knob with a click, and then simply dial in the amount it will affect how that parameter responds over time. It's easy to imagine the depth of possibilities this can open, especially when you consider that each modulator has further parameters inside it, like the Skew and Sense settings. The Envelope Follower can even take a sidechain input to react to your track.

< Mirage's rotating tape delay

Audio Damage describe Mirage as a tape delay, but the tape head is like a rotating head in a VCR. It has the same pitch quantisation settings as Cactus, except this algorithm also includes a setting for the speed that the delay rotates, as well as a setting for how many heads are inside the delay. It clearly represents how many heads are in the delay as well as the speed they spin at, and allows us to create crystalline and harmonic effects, as well as a more classic tape delay effect for lo-fi sound.

Sky Valley granular delay >

Sky Valley is a granular delay with pitchshifting, as well as Grain and Scatter controls. Similar to the granular synthesiser, it creates all sorts of glitchy and repeating sounds and textures through the delay whilst also being able to dial in the clean signal as desired, as well as a Regrain mode option that feeds the grains back into itself, similar to the Regen on the other delay modes. It also has harmonic pitch quantisation options.



< Processing with The Diffuser and Levels Balancer

Diffuser allows us to expand the depth of all the algorithms we've looked at by diffusing the delay signal in different ways. We can adjust the size of the diffuser for larger atmospheres, or make it smaller for quicker, textured tapping type effects. We can low-cut the diffuser, to preserve the low end of the sound whilst adding depth to the higher frequencies. The levels section lets us dial in stereo panning and regen balance for further sculpting. **FM**

Moog One From £5,775

Rob Redman waxes lyrical about his love affair with the Moog One – but is it a keeper?

CONTACT **WHO:** Moog Music **WEB:** moogmusic.com **KEY FEATURES** 8 or 16 analogue voices, Ladder and state variable filters, 4 LFOs, 3 envelope generators, Pitch and mod wheels plus XY pad and aftertouch, Extensive mod matrix, Eventide effects, Sequencer and arpeggiator

A synth like the Moog One is unlikely to be anybody's first: it's large, heavy and expensive. I came to it not long after its release but already had a fairly extensive collection of instruments from '80s classics like the Juno to modern synths from Korg, Arturia and Sequential, alongside over 1,000hp of Eurorack. While I have always managed to find uses for my other gear, the Moog One has become the go-to instrument for an ever increasing number of uses. That might be in part due to the presence of it in my studio, where it definitely dominates but mostly because I have come to rely on the versatility and simple playability. It has become the core of my musical and sound design work and has helped me shape effects for film and game projects; it's also become the focus of a whole album.

Initial concerns about pitch drift, especially in the low end, never turned out to be too much of a problem for me. Keeping it in a studio with a stable temperature and humidity helped there, but Moog updated the firmware, which solved remaining issues. Since updating the firmware it has remained rock solid.

So, what do I love about it? Firstly it's just so easy to navigate. The big screen and controls make it a doddle to work with. Saving sounds, sequences and effects is so simple and fast that a session can be productive but repeatable, something I value highly. But really it's the sound design workflow that sells it for me. Being able to easily assign modulation sources and destinations, without having to dig into menus is a real boon, with excellent visual feedback and being able to dig deeper opens limitless possibilities, but does so only when you need them, staying out of the way when you don't, meaning the whole instrument is clear and simple.

One is not unamused

Then there's the sound. I'd put this second after the interface purely because if the workflow wasn't good I would soon tire of it, no matter how good it sounded. Or I'd end up using presets (I'm looking at you DX7). Luckily the Moog One sounds superb.

ONE OR THREE

It took me a while to get used to One's wilfully split personality but I'm so glad I did. Being able to effectively make it one, two, or three separate synths is so useful. Having a sequence set up on one, a drone with a second and lead on a third makes the One a very playable standalone band in a box. Creating multitimbral soundscapes that can be split or layered, played, or left running in the background can feel like having the best of modular, alongside the accessibility of keys for a lead at the same time, all from one instrument.

THE PROS & CONS

+

Incredibly versatile sound design tools

Excellent navigation via controls and screen

Connects easily to other gear with good I/O ports

–

Large and heavy for gigging musicians

Expensive

It caters to every need, from deep but well-rounded basslines, to sparkling chimelike tones; from lush, warm electric piano sounds to otherworldly crystalline soundscapes. I attribute this partly to the wonderful oscillators but mostly to the filters and envelopes. The ability to assign each oscillator to either the ladder or state variable filter, in series or parallel, is fantastic, as are the three envelopes.

The filter and amp envelopes are what you'd expect from such an instrument and the third makes it all the more special. I really appreciate a separate envelope generator for that extra level of creative freedom. The envelopes themselves are similar to those of the Sub37, one of my other favourite synths, and they range from superfast and snappy to long, with a lot of extra depth from things like Loop and Latch. On top of that, and similarly to the LFOs, each of them has a destination button to quickly assign envelopes.

Where I spend most of my time with the One however tends to be with modulation. The possibilities here are endless and it is a breeze to create evolving tones that twist and warp, all the while staying controllable via a multitude of input, from aftertouch (sadly not polyphonic though) to the great XY pad. I have other synths with XY controls but they often fall flat, unlike the One. As with everything on the One, modulation setup can be as simple as assigning the most common controls to an attribute, or you can dive in to further levels of complexity and this is where the large display really comes in handy.

Really, it's the sound design workflow that sells it for me

One to rule them all?

I've not even touched on the awesome sequencer and arpeggiator, or effects. They're not the very best available but surpass most built-in offerings and the Eventide reverbs sound wonderful. The chorus is outshone by the (admittedly limited) Juno's, but still does a good job.

The One still looks and feels new and inspires me every day and, if it was a little lighter I'd happily gig with it. In an ideal world it would have an extra octave and the texture of the black keys could be better but I'll forgive it all of that for its ability to spark ideas and allow me to realise them, without needing to dig around in menus, meaning I actually use it every day, and love doing so. FM

FM VERDICT

VALUE

BUILD

LONGEVITY

USEFULNESS

OVERALL

9.0

A beast of an instrument. If you could only ever own a single synth then, well, the clue is in the name

A CAREER IN GEAR

Sylvan Esso

© Shervin Lainez

The electronic pop duo explain the gear choices that defined their most important work

Amelia Meath and Nick Sanborn are Sylvan Esso, a duo recording radiant electro-pop that thrums with unrestrained emotion. Balancing the scales between all-out pop melodicism and electronic experimentation, their third album *Free Love* saw them move out of the box and further into modular synthesis, earning them a 2022 Grammy nomination for Best Dance/Electronic Album in the process.

Though they're reinvigorating pop music with adventurous sonic techniques, the duo are no gear snobs: they're equally happy running an entire track through a radio transmitter and pushing Ableton's stock plugins to their limits as they are laying down chords on a monolithic Moog Voyager XL. For our Career in Gear feature, the pair plucked five key tracks from their discography and gave us some insights into the five pieces of studio equipment that defined their sound.

Make Noise Phonogene

HEAR IT ON...

Frequency, Free Love

NS: "*Frequency* was made around this loop that I made with a module called the Make Noise Phonogene. It's this beautiful old sampler that they don't make anymore, that has this wonderfully bad sound to it; it almost sounds like a hacked sampler.

"It's got this ultra lo-fi kind of kind of quality to it. But for whatever reason, it somehow has this miraculous amount of soul in it; it feels like everything you put in there emerges with more intent and meaning than it had going in initially. It's like this way of revealing a melody within something.

"So the whole initial piece, that fluttering sound that provides the backbone of the track, is all me sampling my own voice into this Phonogene and then sequencing it. It's totally one of those things where I don't think that song would have happened without it."

Moog Voyager XL

HEAR IT ON...

Die Young, What Now

NS: "Amelia wrote this at our friend's studio, and we were trying to sketch it out. At this place, they had this absolutely insane Moog Voyager XL. Which was the kind of thing that – especially back then – we would never have access to this giant, beautiful instrument.

"Right away she came in and I wrote that bassline, the main riff of the song, using that. Because we were sitting with that, that part became that classic, Moog-y, almost Hornsby sound, with one oscillator tuned to the root and one tuned to the fifth above. There's no way that song would have happened that way, had that thing not been sitting there.

"It's actually funny, too, because we were recording it, assuming we were just recording the demo. Because the waveforms I was using were so simple, it's literally a triangle wave and a sawtooth. I thought, I'll just remake this on something else, make it tight and play it better and all that stuff. But we couldn't beat the sound of it with anything else. It was one of those things where it's like, it's a triangle wave, how can it be that different? It was so frustrating – we finally had to borrow someone's Voyager and redo it."

1/8 inch radio transmitter

HEAR IT ON...

Free, Free Love

NS: "For our song *Free* I picked an 1/8 inch radio transmitter – do you remember, before you could plug your phone into the car, before Bluetooth, those little things you plug into your Discman? Then you would tune your radio station in the car to that frequency."

AM: "This piece of gear didn't work very good – which was exactly why we loved it."

NS: "We ordered a few of those and started sending things through the radio and recording this old boombox Amelia found."

AM: "Yeah, instead of printing things to tape, we would print it to the radio. But the cool part is that you could play the radio by moving it around. Almost every song on *Free Love* has it. You could really lean into the white noise of the radio."

NS: "The transmitter's not very powerful. So your ability to play the distance between the boombox and the transmitter suddenly becomes its own dancing instrument. And there's this thing that I don't think I realised before we started doing it, that there's the static sound that we all know, of what something sounds like when it's been transmitted over the radio. There's a very specific kind of distortion to it."

AM: "It's the same as iPhone recordings. You didn't notice there was a sound to something, and then you realise how lovely it is, when you can hear it isolated."

NS: "We literally made the mix of the song *Free*, and then we printed the entire song through the radio, and that was the version that ended up being on the record."

> "WE WANTED THE SONG TO FEEL LIKE IT WAS BURSTING AT THE SEAMS, STARTING TO TEAR APART"

Ableton Vocoder

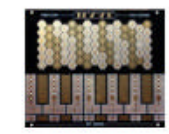
HEAR IT ON...

What If, Free Love

NS: "Let's do another inexpensive one. I think the built-in Ableton Vocoder is not celebrated enough. On *What If*, we really leaned into that being the bulk of the chords and the sound of the whole thing.

"I just feel like that's one of those stock plugins that I don't ever hear anyone talking about. And I use it on almost every single track, it's just so massively powerful. I especially love it on that track. We doubled Amelia's voice and then pitched one of them down an octave. And then we had both of those each going through their own instance of the Vocoder and then being saturated by Ableton's Saturator.

"It makes this massive sound, especially for something that comes with Ableton. It's such a flexible tool. I never reach for any other vocoders, I love that thing so much."



Hyve Touch Synth

HEAR IT ON...

Make It Easy, Free Love

NS: "We really wanted the song to feel like it was bursting at the seams and starting to tear apart. I have this tiny little touch synth called a Hyve."

AM: "It's a really intuitive machine, it makes a lovely sound. It sounds like bees – it's beautiful."

NS: "It's very intuitive to play. There's a keyboard on the bottom, and as you move your finger left and right, it pans left and right. As you move it up and down, it goes up and down octaves. Then there's this hexagonal grid – like a hive – that operates more like a hexagonal keyboard, almost like an accordion-type keyboard.

"I've been playing that into a Landscape Stereo Field on tour. It really just feels like you're playing electricity, in a way that all other electronic instruments does not, to me. It's got this absolutely wild, plaintive, dangerous sound, that was just perfect for that. Especially paired with that Landscape Stereo Field, which is another touch plate thing. It feels like you're holding a lightning bolt, it's got this insane noise to it."

AM: "The mixing of those two touch plates together, it's so beautiful. They really balance each other out." FM

WANT TO KNOW MORE?

Sylvan Esso's *Free Love* is out now on Loma Vista Recordings

Generate new musical ideas in Ableton Live

How can I fatten and widen any sound?

A trick on many synthesisers to achieve a fatter, thicker and even wider sound, is to add another oscillator to the original, and slightly detune them. This is a function that on many synths is called "unison". The idea behind this is that duplicating the sound and detuning will create differences in the length of the waveforms to cause "phasing", but to our ears sound pleasing and give more depth to the sound. However, not all soft synths have this function, and you may wish to see how this sounds on some vocals or guitars? (Spoiler alert, it sounds really good!)

In this example, we are using the new Live 11.1 device, Shifter, in parallel on an effect rack to add extra detuned (and modulated) voices to your sound source.

We'll be taking it a bit further by panning those oscillators and modulating them, assigning all of the controls to a few macros, and having a ready-to-use device with many options to achieve a much bigger (fatter) and wider sound.

ABOUT THE AUTHOR

Cristiano Nicolini is a curious and passionate lover of heartfelt music, quality sounds and inspiring tech. He's constantly researching non conventional ideas and loves helping others be adventurous with their music.
crinico.com

01

Rack a Shifter

Start with any sound, synth or sample; in the example, a Wavetable simple saw patch. We want to create two parallel copies of our sound, one with Shifter in it. Add an empty Effect Rack. Create a second chain and add the Shifter device to it. Then rename your chains accordingly.

02

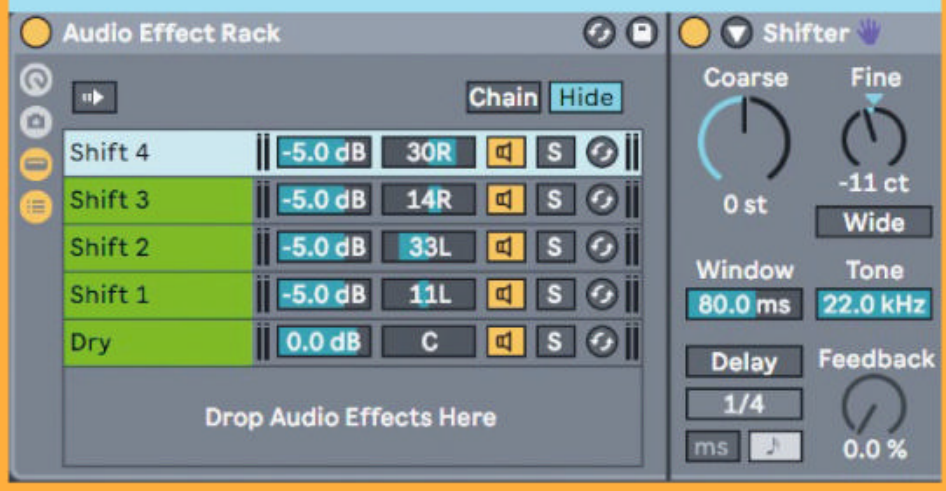
Tweak the Shifter

Once our sound is duplicated, we detune it. On the Shifter device, select the Pitch Mode and dial in a few cents in "fine tuning", use your ears for the amount. For extra modulation dial in a slow LFO rate and a few cents of "st amount" and some Spin for some width.

03

Add more chains

So far we've created one voice of unison. The effect is already effective, but more voices create a richer sound. Create more chains and repeat step 2, using different detuning for each chain. To avoid distortion, lower the volume of the chains and use panning for a wider feel.



04

Macro it all

Assign to Macros the main parameters to have a ready-to-use device. We've done the detune, panning, LFO and spin. Tweak the scaling so the same macro dials in different values and remember the handy function of "Map to all siblings". Since we're playing with phase, each sound responds differently, so trust your ears!

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